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Macrovision Statement

If your computer has a DVD drive and an analog TV Out port, the following paragraph applies:

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Important Safety Information

Safety Instructions

Your system is designed and tested to meet the latest standards for safety of information technology equipment. However, to ensure safe use of this product, it is important that the safety instructions marked on the product and in the documentation are followed.

Always follow these instructions to help guard against personal injury and damage to your system.

Setting Up your System

- Read and follow all instructions marked on the product and in the documentation before you operate your system. Retain all safety and operating instructions for future use.
- Do not use this product near water or a heat source such as a radiator.
- Set up the system on a stable work surface.
- The product should be operated only with the type of power source indicated on the rating label.
- Ensure that the electrical outlet you are using to power your equipment is easily accessible in case of fire or short circuit.
- If your computer has a voltage selector switch, make sure that the switch is in the proper position for your area.
- Openings in the computer case are provided for ventilation. Do not block or cover these openings. Make sure you provide adequate space, at least 6 inches (15 cm), around the system for ventilation when you set up your work area. Never insert objects of any kind into the computer ventilation openings.
- Ensure that the fan vents on the bottom of the casing are clear at all times. Do not place the computer on a soft surface, doing so will block the bottom vents.
- If you use an extension cord with this system, make sure that the total ampere rating on the products plugged into the extension cord does not exceed the extension cord ampere rating.

Care During Use

- Do not walk on the power cord or allow anything to rest on it.
- Do not spill anything on the system. The best way to avoid spills is to not eat or drink near your system.
- Some products have a replaceable CMOS battery on the system board. There is a danger of explosion if the CMOS battery is replaced incorrectly. Replace the battery with the same or equivalent type recommended by the manufacturer. Dispose of batteries according to the manufacturer's instructions. If the CMOS battery requires replacement insure that a qualified technician performs the task
- When the computer is turned off, a small amount of electrical current still flows through the computer. To avoid electrical shock, always unplug all power cables, remove the battery and modem cables from the wall outlets before cleaning the system.
- Unplug the system from the wall outlet and refer servicing to qualified personnel if:
  - The power cord or plug is damaged.
  - Liquid has been spilled into the system.
  - The system does not operate properly when the operating instructions are followed.
  - The system was dropped or the casing is damaged.
  - The system performance changes.

Replacement Parts and Accessories

Use only replacement parts and accessories recommended by manufacturer.

To reduce the risk of fire, use only No. 26 AWG or larger telecommunications line cord.

Do not use this product in areas classified as hazardous. Such areas include patient care areas of medical and dental facilities, oxygen rich environments, or industrial areas.

Battery Disposal

Do not put rechargeable batteries or products powered by non-removable rechargeable batteries in the garbage.

Contact the Samsung Helpline for information on how to dispose of batteries that you cannot use or recharge any longer.

Follow all local regulations when disposing of old batteries.

Laser Safety

All systems equipped with CD or DVD drives comply with the appropriate safety standards, including IEC 825. The laser devices in these components are classified as "Class 1 Laser Products" under a US Department of Health and Human Services (DHHS) Radiation Performance Standard. Should the unit ever need servicing, contact an authorized service location.

Laser Safety Note:
Use of controls or adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure. To prevent exposure to laser beams, do not try to open the enclosure of a CD or DVD drive.

Power Cord Requirements

The power cord set (wall plug, cable and AC adapter plug) you received with your computer meets the requirements for use in the country where you purchased your equipment.

Power cord sets for use in other countries must meet the requirements of the country where you use the computer. For more information on power cord set requirements, contact your authorized dealer, reseller, or service provider.

General Requirements

The requirements listed below are applicable to all countries:

- The length of the power cord set must be at least 6.00 feet (1.8m) and a maximum of 9.75 feet (3.0m).
- All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country where the power cord set will be used.
- The power cord set must have a minimum current capacity of 7 A and a nominal voltage rating of 125 or 250 volts AC, as required by each country's power system.
- The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C7 connector, for mating with appliance inlet on the computer.

Regulatory Compliance Statements

Wireless Guidance

Low power, Radio LAN type devices (radio frequency (RF) wireless communication devices), operating in the 2.4 GHz Band, may be present (embedded) in your notebook system. The following section is a general overview of considerations while operating a wireless device.

Additional limitations, cautions, and concerns for specific countries are listed in the specific country sections (or country group sections). The wireless devices in your system are only qualified for use in the countries identified by the Radio Approval Marks on the system rating label. If the country you will be using the wireless device in, is not listed, please contact your local Radio Approval agency for requirements. Wireless devices are closely regulated and use may not be allowed.

The power output of the wireless device or devices that may be embedded in your notebook is well below the RF exposure limits as known at this time. Because the wireless devices (which may be embedded into your notebook) emit less energy than is allowed in radio frequency safety standards and recommendations, manufacturer believes these devices are safe for use. Regardless of the power levels, care should be taken to minimize human contact during normal operation.

As a general guideline, a separation of 20 cm (8 inches) between the wireless device and the body, for use of a wireless device near the body (this does not include extremities) is typical. This device should be used more than 20 cm (8 inches) from the body when wireless devices are on and transmitting.

This transmitter must not be collocated or operate in conjunction with any other antenna or transmitter.

Some circumstances require restrictions on wireless devices. Examples of common restrictions are listed below:

Radio frequency wireless communication can interfere with equipment on commercial aircraft. Current aviation regulations require wireless devices to be turned off while traveling in an airplane. 802.11B (also known as wireless Ethernet or Wifi) and Bluetooth communication devices are examples of devices that provide wireless communication.

In environments where the risk of interference to other devices or services is harmful or perceived as harmful, the option to use a wireless device may be restricted or eliminated. Airports, Hospitals, and Oxygen or flammable gas laden atmospheres are limited examples where use of wireless devices may be restricted or eliminated. When in environments where you are uncertain of the sanction to use wireless devices, ask the applicable authority for authorization prior to use or turning on the wireless device.

Every country has different restrictions on the use of wireless devices. Since your system is equipped with a wireless device, when traveling between countries with your system, check with the local Radio Approval authorities prior to any move or trip for any restrictions on the use of a wireless device in the destination country.

If your system came equipped with an internal embedded wireless device, do not operate the wireless device unless all covers and shields are in place and the system is fully assembled.

Wireless devices are not user serviceable. Do not modify them in any way. Modification to a wireless device will void the authorization to use it. Please contact manufacturer for service.

Only use drivers approved for the country in which the device will be used. See the manufacturer System Restoration Kit, or contact manufacturer Technical Support for additional information.

European Union

The following information is only applicable to systems labeled with the CE mark CE.

European Directives

This Information Technology Equipment has been tested and found to comply with the following European directives:

- EMC Directive 89/336/EEC with amending directives 92/31/EEC & 93/68/EEC as per
  - EN 55022 Class B
  - EN 61000-3-2
  - EN 61000-3-3
  - EN 55024
- Low Voltage Directive (Safety) 73/23/EEC as per EN 60950(A1/A2/A3/A4/A11)
- Radio and Telecom Terminal Equipment Directive 199/5/EC as per
  - CTR21 (if fitted with a modem device)
  - ETS 300 328 (if fitted with a 2.4 GHz band embedded wireless device)
  - ETS 301 489-1 (if fitted with a 2.4 GHz band embedded wireless device)
  - ETS 301 489-17 (if fitted with a 2.4 GHz band embedded wireless device)

European Radio Approval Information (for products fitted with EU-approved radio devices)

This Product is a Notebook computer; low power, Radio LAN type devices (radio frequency (RF) wireless communication devices), operating in the 2.4 GHz band, may be present (embedded) in your notebook system which is intended for home or office use. This section is only applicable if these devices are present. Refer to the system label to verify the presence of wireless devices.

Wireless devices that may be in your system are only qualified for use in the European Union or associated areas if a CE mark CE with a Notified Body Registration Number and the Alert Symbol is on the system label.

The power output of the wireless device or devices that may be embedded in you notebook is well below the RF exposure limits as set by the European Commission through the R&TTE directive.

European States qualified under wireless approvals:

EU	Austria, Belgium, Denmark, Finland, France (with frequency restrictions), Germany, Greece, Ireland, Italy, Luxembourg, The Netherlands, Portugal, Spain, Sweden and the United Kingdom.
Accept EU	Iceland, Liechtenstein, Norway and Switzerland

European States with restrictions on use:

EU	In France, the frequency range is restricted to 2446.5-2483.5 MHz for devices above 10 mW transmitting power such as wireless LAN.
Accept EU	No limitations at this time.

European Telecommunication Information (for products fitted with EU-approved modems)

Marking by the symbol CE indicates compliance of this equipment to the Radio and Telecom Terminal Equipment Directive 1999/5/EC. Such marking is indicative that this equipment meets or exceeds the following technical standards:

CTR 21 – Attachment requirements for pan-European approval for connection to the analogue Public Switched Telephone Networks (PSTNs) of TE (excluding TE supporting voice telephony services) in which network addressing, if provided, is by means of Dual Tone Multi-Frequency (DTMF) signaling.

Although this equipment can use either loop disconnect (pulse) or DTMF (tone) signaling, only the performance of the DTMF signaling is subject to regulatory requirements for correct operation. It is therefore strongly recommended that the equipment is set to use DTMF signaling for access to public or private emergency services. DTMF signaling also provides faster call setup.

This equipment has been approved to Council Decision 98/482/EEC—"CTR 21" for Pan-European single terminal connection to the Public Switched Telephone Network (PSTN).

However, due to differences between the individual PSTNs provided in different countries, the approval does not, of itself, give an unconditional assurance of successful operation on every PSTN termination point. In the event of problems, you should contact manufacturer Technical Support.

Using Your Documentation

Congratulations on your purchase of a notebook computer with the Windows® XP operating system. Whether you are new to using a portable computer or are an experienced user, this user's manual can help you get the most from your computer.

Manual Documentation Conventions

Information Icons

Three icons and their associated messages appear in this manual. The information icons are placed before the step/information they apply to:

Warning:
Indicates the possibility of personal injury.

Caution:
Warns you of possible damage to equipment or data.

Note:
Informs you of special circumstances.

Technical Information:
Informs you of special requirements or limitations for use of item(s).

Keyboard Conventions

Keys that you need to press to perform certain functions are displayed in the manual using a small graphic of the button.
For example: <Ctrl> indicates the control key (**Ctrl** on the keyboard).

If you need to press two keys at the same time, the key names are shown joined by a plus sign.
For example: <Fn+F9> means that you should press the **Fn** key and hold it and then press the **F9** key.

CD-ROM Device Naming Convention

In many installation programs you will have to get a program from the CD-ROM device. The program installation sequence assumes that the CD is drive d:\, however this is not always the case. The name of the CD-ROM drive is the letter following the letter assigned to your last HDD. For instance, if you have one HDD with two partitions, the HDD is drives C: and D: and the CD-ROM drive is then drive E.

Touchpad Conventions

You may be asked to click or double-click on items on the display screen. As a general note the touchpad actions act much in the same way as a wheel mouse, any differences are explained fully.

The object that needs to be clicked upon will be displayed in **Bold** text or shown in a small figure such as the **"Start Button"** shown on the right =>.

Table 1. Touchpad Click Conventions

Action	Process
Click	Depress the touchpad left button and release
Double-click	Quickly click the left touchpad button two times

Windows Conventions:
Almost all "Windows" programs will display the name/function of a button or icon if you place the touchpad pointer on the item you want information about.

Software User Documentation

Your computer is shipped from the factory with several software programs installed. The software may include its own online or printed documentation. Refer to the documentation or the Help options in the software for more information.

The figures and illustrations in this manual may not be identical to those on your system.

General Icon Note:
Some of the Icons used in Windows XP may be placed on the taskbar by selecting **(ex: Place the volume icon in the taskbar)** in the properties dialog box.

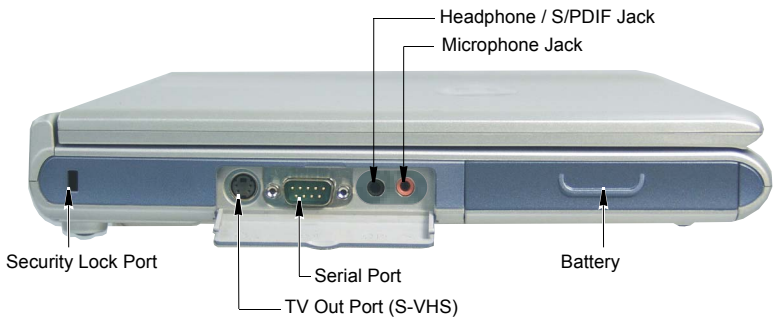
Introducing Your Computer

This section explains the location of all buttons, LEDs and equipment needed to operate your notebook computer.

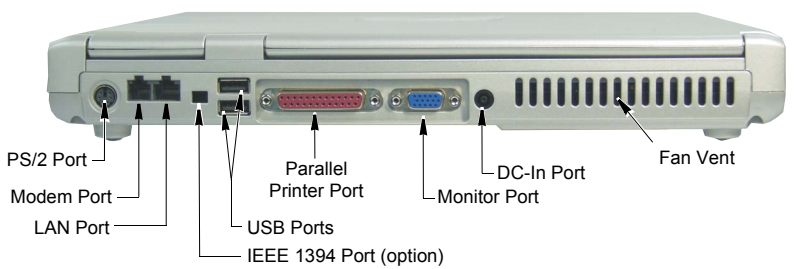
Front

Right Side

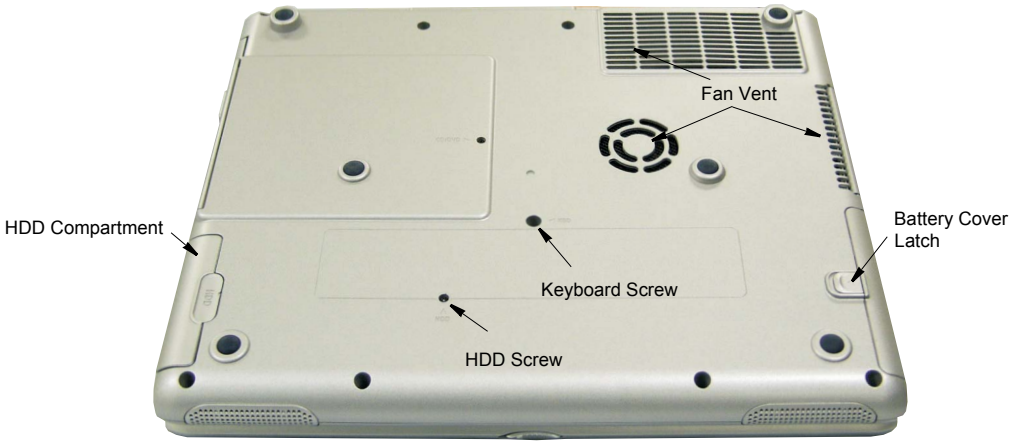
Left Side



Back Side



Bottom


Fan Vent
HDD Compartment
Battery Cover Latch
Keyboard Screw
HDD Screw

Using Your Computer for the First Time

Turning the Computer On and Off

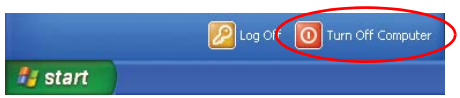
To turn on the computer

1. Insert the battery and connect the AC adapter according to the Installation Guide.
2. Slide the LCD latch to the right and open the LCD panel.
3. Press the power button.

To turn off the computer

1. Click the **start** button (

) on the taskbar.
2. Click **Turn Off Computer**.



3. Click **Turn Off**.

If the computer is not turned off properly due to a system error, press **<Ctrl>+<Alt>+<Delete>**. When [Windows Task Manager] dialogs appears, click **Shut Down > Turn Off** to turn off the computer. Your unsaved work may be damaged.

If **<Ctrl>+<Alt>+<Delete>** keys do not operate either, press the power button for more than 4 seconds to turn off the computer. Your unsaved work may be damaged. When you turn on the computer next time, it will perform a disk checking process.

Tips for Using Your Computer

The following information helps you avoid potential problems as you use your computer:

Do not try to disassemble your computer. Opening the system chassis voids your warranty. Only an authorised manufacturer service center can replace or add any parts inside the chassis.

- Follow all the instructions and cautions in your computer user documentation.
- The LCD has a polarized surface and can be damaged easily. To prevent damage, avoid touching the screen.
- Use only approved AC adapters, auto adapters, memory modules and other options.
- Because a notebook computer is small and has restricted air flow around components, it is more likely to overheat than a desktop computer. A fan inside your computer runs when needed to help eliminate heat. Make sure the fan vent on the bottom of your computer is not blocked when the computer is in use. Occasionally check the vents and remove any accumulated dust on the outside.
- Avoid using or storing the computer in extremely hot or cold areas, such as a car on a hot day. Keep the computer away from heaters and out of direct sunlight. Exposure to excessive heat may damage computer components. If you have left your computer in a hot place, let it cool down slowly to room temperature (with the LCD panel open) before using it.
- Do not remove the memory-module compartment door, or try to install a memory module when the computer is on. (For information on installing memory modules, see “Installing a Memory Module” on page 68.)
- Set up your computer work area to avoid physical strain. Sit with your back straight and supported by your chair. Adjust your chair or work table so that your arms and wrists can remain in a relaxed position, parallel with the floor. Avoid bending or twisting your wrists as you work. Your hands should “float” slightly above the keyboard. Refer to a book on office ergonomics for more information on setting up your work area.
- Take frequent breaks from working at the computer to rest your eyes and stretch your muscles.
- Remember to save your data files frequently and to make backup copies of your files.

Travelling with Your Computer

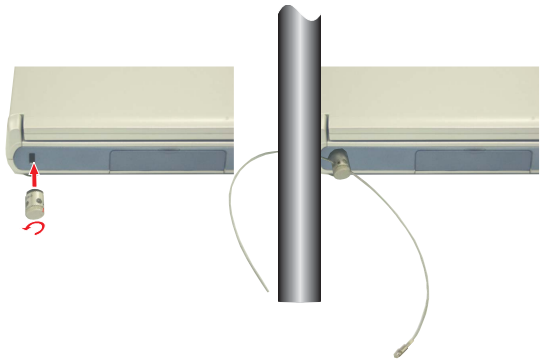
Air Travel

If you are travelling by air, follow these tips:

- Take the computer with you as carry-on luggage. Do not check the computer with your baggage.
- Allow the computer and disks to go through the X-ray security devices. Do not hand-carry disks through the walk-through metal detectors, which can cause loss of data.
- Make sure that the battery is charged or the power cord is easily accessible. You may be required to turn on the computer for airport security personnel.
- Be prepared to turn off the computer during take off and landing.

Locking your Computer

As a precaution when you are travelling or using your computer in an unsecured area, you should keep your computer as safe as possible. An option to do this is the Security Lock System. Follow the Security Lock System manufacturers instructions for specific installation and use. The following figure shows generally how to use the lock.



Handling Spills

Do not spill anything on your computer. The best way to avoid spills is to avoid eating and drinking around your computer. If you do spill something on your computer, turn off your computer, unplug it immediately, and do the following:

- If you spill liquid on the keyboard, drain as much of the liquid from the keyboard as possible. Be careful not to let the liquid drip onto the LCD panel. Allow the system to dry for several days before trying to use it.
- If you spill liquid on an external keyboard or keypad, unplug it and drain as much of the liquid as possible. Allow the keyboard to sit at room temperature for a full day before trying to use it.

Sweet liquids leave a sticky residue that may jam the keyboard despite your efforts to dry it.

- If you spill liquid on the LCD panel, clean it immediately with a soft cloth and denatured alcohol or a proprietary LCD screen cleaner. Do not use water, window cleaner, acetone, aromatic solvent, or dry, rough towels to clean it.

Some liquids damage the polarized LCD screen. If your screen is damaged, contact your authorized manufacturer's service center for a replacement.

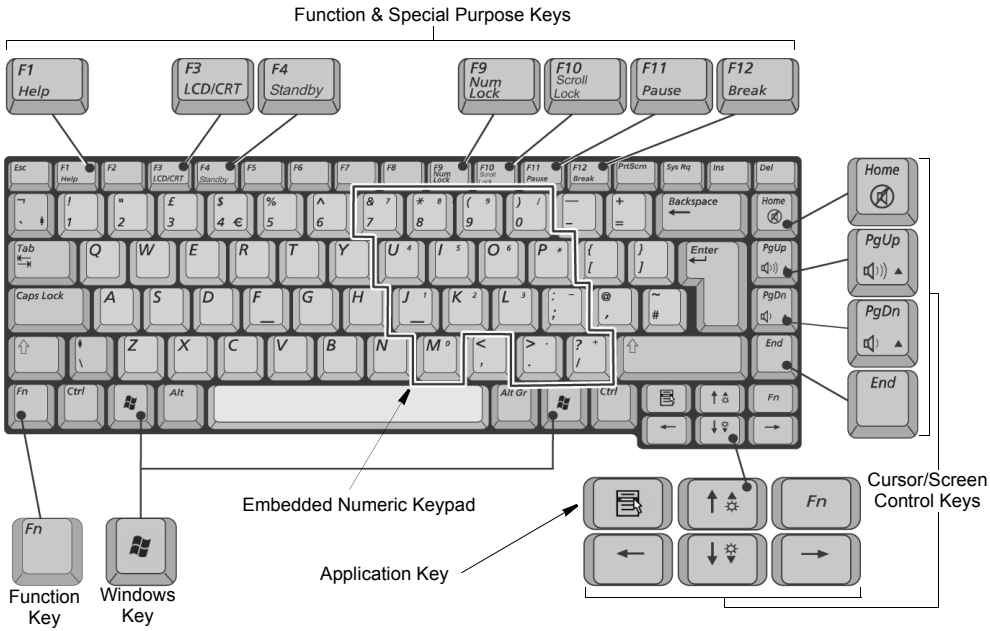
Storing the Computer for Long Periods

If possible, leave the power cord connected to the computer and an electrical outlet when the computer is not in use. This extends the life of the battery and keeps the battery fully charged.

If you will not be using the computer for a long period of time (a month or more), you should charge the battery until it is completely full. After you have done so, remove the battery from the unit.

Using the Keyboard

Your computer has an 87/88-key keyboard. By pressing designated key combinations, you can have access to all the key functions of a full-sized keyboard.



Although the layout of the keys on your computer's keyboard is different from that on a desktop computer's keyboard, the keyboard feels like a full-sized keyboard when you use it.

The keys on the keyboard can be grouped into the following categories:

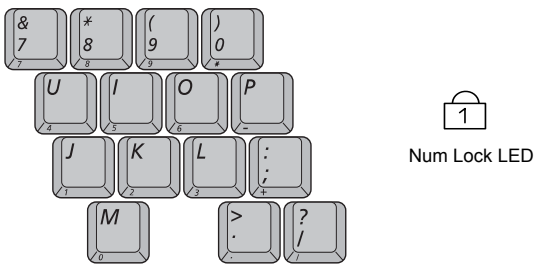
- Full-sized Alphanumeric typewriter keys are arranged like a standard typewriter keyboard and are used for text entry. The Windows keys on either side of the spacebar open Windows menus and perform other special functions.
- Function keys, when pressed together with the **<Fn>** key, enable special functions.
- Cursor and Screen control keys move the cursor. They may perform other functions, depending on your software.

To clean the computer keyboard, use slightly damp cotton swabs. Scrub the keys and the surface around the keys.

Do not allow liquid to drip into the keyboard or you may damage the keyboard.

Using the Numeric Keypad

Your keyboard includes a numeric keypad, which is a group of keys that you can set to type numbers and mathematical symbols, such as the plus sign. A number or symbol on the left corner of each keypad key shows its numeric function.



Press **<Fn+F9>** to turn on the embedded numeric keypad. The numeric functions of the keypad are enabled and the Num Lock LED turns on. (See ”Reading the Status Indicators” on page 18 for the location of the Num Lock LED.)

While the numeric functions are enabled, you can temporarily return a key to its normal function by pressing the key and the **<Fn>** key. For example to type the letter *m,* press **<Fn+M>**. This operation displays the letter **m**.

To turn the numeric keypad off, press **<Fn+F9>** again. The Num Lock LED turns off.

Using Special Function Keys

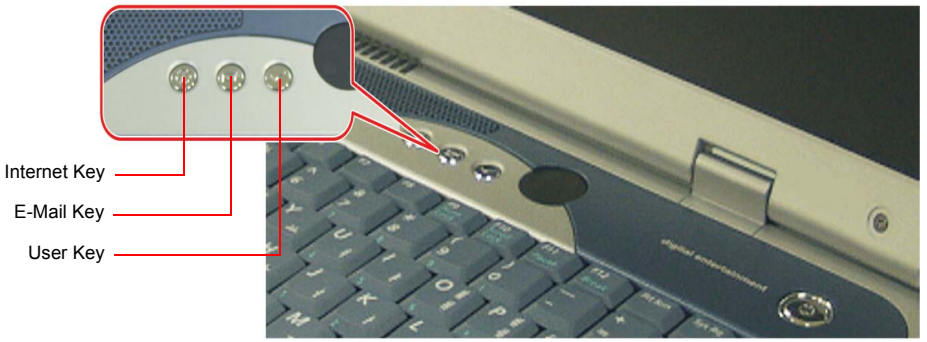
The function key activates special functions when it is pressed in combination with another keys. The table below shows the special key combinations.

<Fn> Key Combinations	Key Name	Key Function
<Fn+F3>	**F3** LCD/CRT	Switches the display between the LCD, the external monitor, and simultaneous display on both the LCD and the external monitor.
<Fn+F4>	**F4** Standby	Puts the computer into Suspend mode. To resume normal operation from rest, press the power button. (See ”Using Power Management Options” on page 61 for more information about the standby mode.)
<Fn+F9>	**F9** Numlock	Activates the numeric keypad
<Fn+F10>	**F10** Scroll Lock	In some applications, sets the cursor-control keys to scroll the page up or down while the cursor position does not change. Pressing key combination again turns off the scrolling function.
<Fn+F11>	**F11** Pause	In some applications, this will pause the program. Pressing key combination again turns off the pause function.
<Fn+F12>	**F12** Break	In some applications, this will stop (Break) the program.
<Fn+Home>	**Home** Mute	Mutes the audio.
<Fn+PgUp>	**PgUp** Volume Up	Increases the audio volume.
<Fn+PgDn>	**PgDn** Volume Down	Decreases the audio volume.
<Fn+Up Arrow>	**Up Arrow** Brightness Up	Increases the LCD brightness.
<Fn+Down Arrow>	**Down Arrow** Brightness Down	Decreases the LCD brightness.

When you press a function key combination, the system sound may be temporarily muted.

Hot Keys

You may program the three keys to the left of the power button to start any program you have installed on your computer.

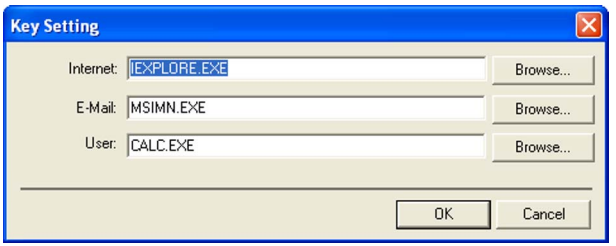


The default settings for these keys are:

Internet Explorer Outlook Express Windows Calculator

To reprogram the hot keys, follow the steps below:

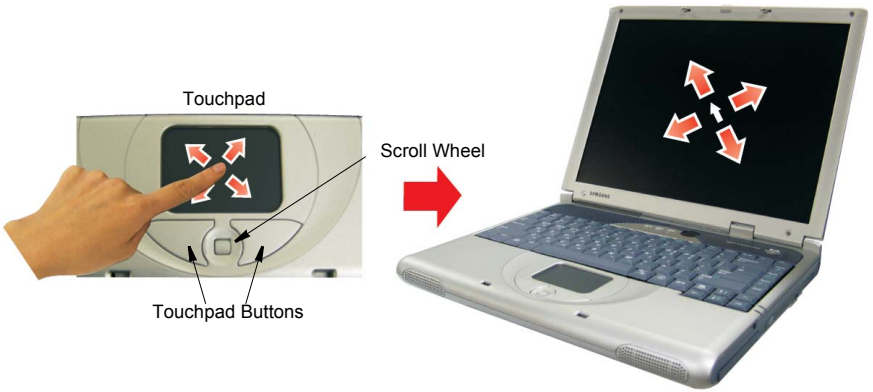
1. Double-click icon on the Windows taskbar, the **Key Setting** window is displayed.



2. Select a key and click the **Browse** to locate the program you wish to assign to the key.
3. Click on your program choice to select it. Click **Open**.
4. Click **OK** to close window.

Using the Touchpad

On Windows, you always see a small graphical image on the screen that indicates the location where you can take the next action. This image is called a pointer, and is usually displayed in arrow shape ( ) or 'I' shape ( ).



The touchpad on your computer allows you to move the pointer on the LCD screen, just like a mouse that is used with a desktop computer. The touchpad buttons allow you to take actions with the pointer, such as selecting an item or executing a command. The scroll wheel between the touchpad buttons moves the displayed area up and down within a window.

You can use various actions with your touchpad as described below.

Action	Function	Process
Move	Move the pointer	Place your finger on the touchpad and slide your finger to a destination.
Click	Select an object, open a menu, or execute a button	Place the pointer over an object, then press left touchpad button once. Or, place the pointer over an object, then tap the touchpad once with your finger.
Double-Click	Launch a program or open a file	Place the pointer over an object, then quickly press left touchpad button twice. Or, place the pointer over an object, then quickly tap the touchpad twice with your finger.
Right-Click	Display a short cut menu	Place the pointer over an object, then press right touchpad button once
Drag	Move an object, or select an area or multiple objects	Place the pointer over an object or on a starting location. While pressing the left touchpad button, press down on the touchpad and slide your finger to a destination or ending location.

Action	Function	Process
Scroll 	Display upper/lower/left/right part of the content within a window (Applicable to only some programs)	Place your finger on the scroll wheel, and roll the wheel up or down. Or, place your finger on the right edge or bottom edge of the touchpad and move vertically or horizontally.

If the mouse pointer does not move smoothly when a PS/2 mouse is connected

When a PS/2 mouse is connected, the mouse pointer may not move smoothly or move irregularly. In those cases, click **Start > Control Panel > Add/ Remove Programs**. Then, check whether the Synaptics ToutchPad program is installed. If not installed, install the Synaptics TouchPad program using the System Software CD.

Make sure to use your finger to move the pointer with the touchpad. Do not use any sharpened tool because it will damage your touchpad.

If you want to use fully the various functions of the touchpad and touchpad buttons, refer to and adjust mouse-related settings on Control Panel.

The PS/2 Mouse item should be set to 'Enabled' on the Advanced menu of System Setup to use both touchpad and mouse at the same time.

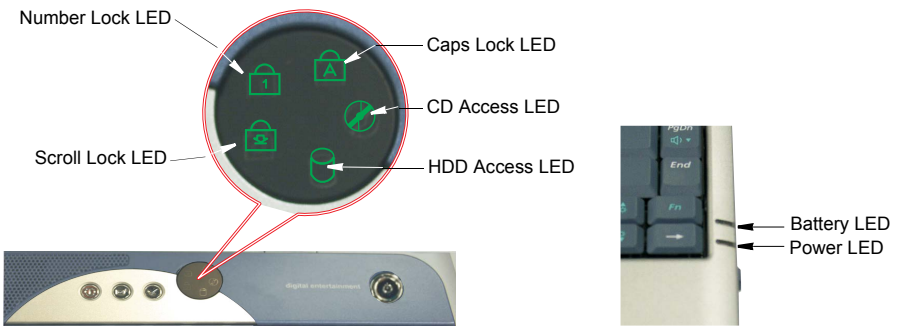
When the computer awakes from the standby mode or hibernation mode, the touchpad may not operate smoothly. This problem may occur during initialization of the touchpad. After a while, it will operate normally.

If the touchpad tapping function does not work on Windows 98, first check whether the touchpad driver is installed.

If the driver is installed and the touchpad tapping function does not work, adjust the settings as follows.

Click **Start > Settings > Control Panel > Mouse > Advanced**. Select the "Use tapping" option. Then, the touchpad tapping function will operate normally.

Reading the Status Indicators



LED	Name	Function
	HDD Access	Blinking Blue - HDD is being accessed.
	CD Access	Blinking Blue - CD is being accessed.
	Num Lock	Changes a portion of the keyboard to a numeric keypad. See "Using the Numeric Keypad" on page 12.
	Caps Lock	Changes all alpha or letter input into capital letters. No changes occur to numeric and special keys.
	Scroll Lock	Scroll lock in certain software.
	Power	Green - System power on. Blinking - Standby mode.
	Battery	Green - No battery pack installed/battery fully charged. Amber - Charging. Blinking - Bad Battery

Using The Computer

Using the Floppy Disk Drive (Option)

You can purchase an external floppy disk drive to use with your computer.

To insert a floppy disk

To use the floppy disk drive, install the appropriate driver in the FDD drive installation CD provided with your floppy disk drive.

1. Connect the floppy disk drive's USB cable to the USB port of your computer.
2. Insert a floppy disk with the label facing up until the eject button pops out.

To eject a floppy disk

1. Stop any process that accesses the floppy disk drive and ensure the FDD access LED is turned off.
2. Press the eject button and the floppy disk pops out. Remove the floppy disk.

If you remove the floppy disk when the FDD access LED is on, the disk and the data in it may be damaged.

Using the CD Drive

You have one of following drives installed on your computer.

- CD-ROM drive: You can read a CD.
- CD-RW drive: You can read and write a CD.
- DVD-ROM drive: You can read a CD/DVD.
- CD-RW/DVD-ROM combo: You can read a CD/DVD and write a CD.

To insert a CD

1. Press the eject button on right side of the CD drive.
2. When the tray slides out, place a CD onto the tray with the label facing up, and push the CD down until it clicks.

3. Push the tray in gently until it clicks.

To eject a CD

1. Stop any process that accesses the CD drive and ensure the CD access LED is turned off.
2. Press the eject button on right side of the CD drive.
3. When the tray slides out, remove the CD from the tray.
4. Push the tray in gently until it clicks.

If you remove the CD when the CD access LED is on, the disk and the data in it may be damaged.

Emergency Eject Hole
To eject a CD when the CD drive is not working or the computer is turned off, unfold a paper clip, and insert the unfolded end of the clip into the emergency eject hole and press until the CD tray opens.

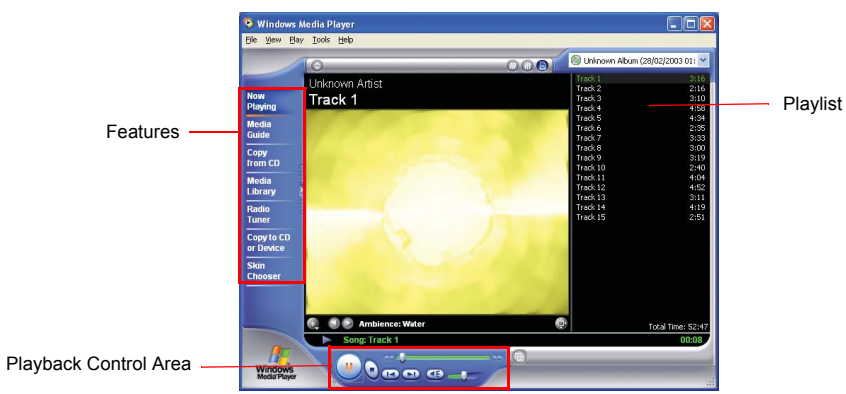
To clean a CD or DVD title
Clean the disc with a soft clean cloth by wiping from the center outwards.

To play a DVD
You have to install the DVD software provided on a separate CD to view a DVD title.

To use the Windows Media Player

The Windows Media Player allows you to play audio and video files from the computer or the Internet.

To launch the Windows Media Player, click **Start > All Programs > Accessories > Entertainment > Windows Media Player**.



Windows Media Player tour
For more information about using the Windows Media Player, run the Windows Media Player and click **Help > Help Topics > Windows Media Player tour**.

To play a video CD

If a video CD does not run automatically, follow these steps.

1. Insert a video CD into the CD drive.
2. When the CD drive window appears, double-click the MPEGAV folder.
3. Double-click the .dat file.
4. When the [Caution] dialog appears, click **Open With**.
5. Select "Select the program from a list" and click **OK**.
6. Select the **Windows Media Player**, and click **OK**. The video starts playing.

Above procedure applies only to the video CDs that has a .dat file as the execution file. Playing procedure may be different according to video CDs.

To control the volume

Using the keyboard:

Press **<Fn>+<PgDn>** or **<Fn>+<PgUp>** to adjust volume.

Using the volume control program:

Click the **Volume** icon ( ) on the taskbar, and adjust the slide bars.

Or, double-click the **Volume** icon ( ) on the taskbar, and adjust the settings in the [Master Volume] dialog.

To display the Volume icon on the taskbar
Click **Start > Control Panel > Sound, Speech, and Audio Devices > Sounds and Audio Devices**. On the **Volume** tab, select "Place volume icon in the taskbar" check box and click **OK**.

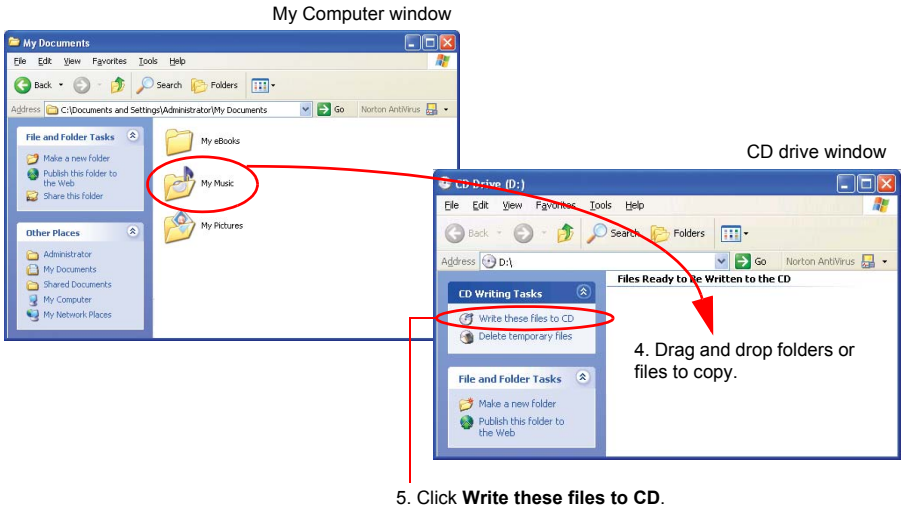
To write data on a CD (Option)

If you have CD-RW drive or CD-RW/DVD ROM combo drive installed on your computer, you can write data on a CD.

This function is provided in Windows XP only. Install the CD writer software provided on a separate CD to write a CD in other operating systems.

You cannot write on a CD that already has data in it.

1. Insert a blank CD into the CD drive.
2. On the [CD Drive] dialog, select **Open Writable CD Folder** and click **OK**. The CD drive window appears.
3. Click **Start > My Computer**.
4. In My Computer window, select files and folders to copy, then drag and drop them onto the CD drive window.



5. Click **Write these files to CD** in the CD drive window.
6. When the CD Writing Wizard appears, enter the CD label, and click **Next**. The data begins copying.
7. When copying is completed, a message ‘completed’ appears and the CD drive window opens automatically.

For more information on writing CDs
Click **Start > Help and Support**. Type “CD copy” in the search field, and click the **Search** icon ( ).

To create an audio CD
Run the Windows Media Player program, click the **Help > Help Topics**. Click Using Windows Media Player > Using CDs > Creating your own CDs > To create your own CD.

Enjoying Home Theater (S/PDIF Port)

Your computer supports 5.1 channel output, which is a basic function for home theater systems, and DVD drives. It provides 3D surrounding sound and vivid screen.

What is a home theater system?
Home theater system usually consists of a TV, DVD, 5.1 channel speaker, and digital amp and provides a high-resolution screen (MPEG2) and 3D surrounding sound (Dolby 5.1 or DTS). With a home theater system, you can enjoy a vivid screen and sound in your home as if you are in a movie theater.

Following devices is required to enjoy a home theater system.

- 5.1 channel speakers including amplifier and connection cables (Purchased separately)
- DVD drive and program
- TV output port on your computer

When purchasing a 5.1 channel speaker, make sure it supports S/PDIF (optical) port.

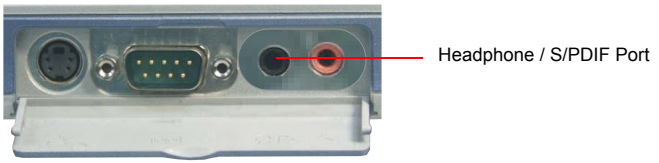
You need a CD/DVD that supports 5.1 channel to enjoy the 5.1 channel speaker system.

To use home theater system, complete the following procedures:

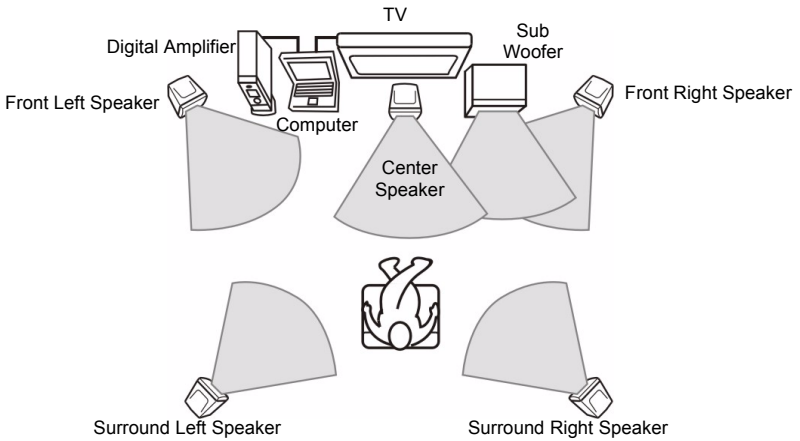
- Step 1. Connect digital amp and speakers to the computer.
- Step 2. Enable S/PDIF port on the computer.
- Step 3. Enable S/PDIF on the DVD program.

Step 1. Connect digital amp, speakers, and TV to the computer

1. Connect a digital amp to the S/PDIF port of your computer.



2. Connect speakers to the digital amp.



To watch through a TV
Connect the TV and change the setting in the Display Properties to TV. See “Using External Display Devices” on page 73.

Step 2. Enable S/PDIF port on the computer

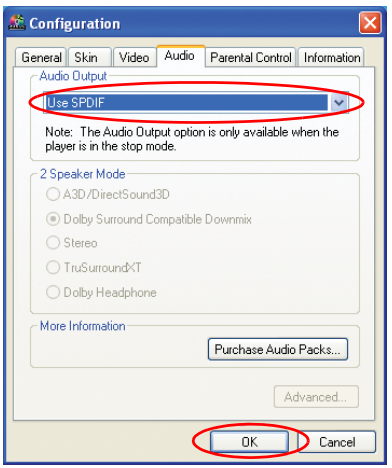
1. Click **Start > Control Panel > Sounds, speech, and Audio Devices > Sounds and Audio Devices**.
2. On the **Volume** tab, click **Advanced** in the Device volume area.
3. On the [Master Volume] dialog, click **Options > Advanced Control** to display the **Advanced** button.
4. Click **Advanced**, select “S/PDIF” check box, and click **OK**.

Step 3. Enable S/PDIF on the DVD program

To use 5.1 channel speakers, you need to install the Power DVD program from the DVD Installation CD provided with your computer, then change the settings as following procedure.

1. Run Power DVD program and click the **Settings** icon ( ).

2. On the **Audio** tab, set the Audio Output setting to "Use SPDIF" and click **OK**.



Now, you can enjoy home theater using DVD titles.

If you have enabled S/PDIF on the DVD program, sound will not be output to the built-in speaker and the headphone terminal.

To control volume for your 5.1 channel speaker, use the control on the digital amp. (Please refer to the speaker manual.)

Using the PCMCIA Card Slot

Various different functions can be added by inserting PCMCIA cards into the system. This system supports 16/32 bit, type I or II PCMCIA card types.

The PCMCIA card slot does not support a ZV card or a PCMCIA III card.

To insert a PCMCIA card

Before using the PCMCIA slot, remove the slot protector.
Push the eject button of the PCMCIA card slot once to pop it out. Push the button again to eject the slot protector.

1. Insert a PCMCIA card into the PCMCIA card slot on the side of the computer.

2. Windows automatically installs the necessary driver for the card. If there is no available driver found by Windows, you have to install the driver using a disk supplied with the card.

To remove a PCMCIA card

1. Double-click **Safely Removes Hardware** icon ( ) on the taskbar.
2. On the [Safely Remove Hardware] dialog, select the appropriate PCMCIA card and click **Stop**.
3. When [Stop a Hardware Device] dialog appears, click **OK**.
4. Click **Close** to close the [Safely Remove Hardware] dialog.
5. Push eject button of the PCMCIA card slot once, then the button pops out.

6. Push the button again to eject the PCMCIA card.

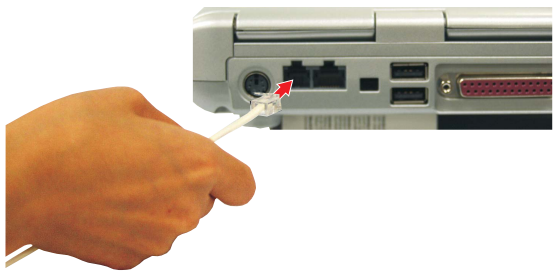
Connecting to the Internet

Connecting with a Modem

Before Start:

- Prepare a telephone line that is not digital.
- Contact an internet service provider (ISP) for instructions on how to connect to and disconnect from the Internet, and fees.

1. Connect a telephone line to the computer's modem port.

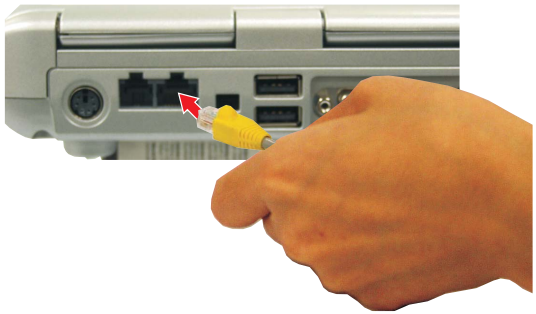


2. Connect to the Internet according to the instructions provided by your ISP.

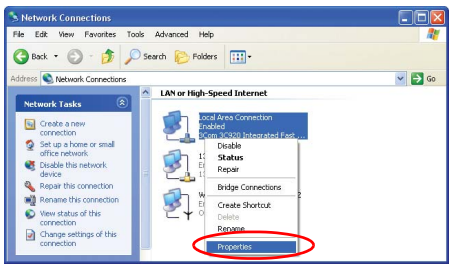
If the Internet connection is not disconnected properly, additional telephone charges may be imposed.

Connecting Through a Wired LAN

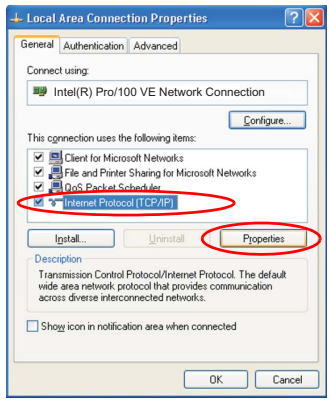
1. Connect a LAN cable to the computer's LAN port.



2. Click **Start > Control Panel**.
3. Click **Network and Internet Connections** in the [Control Panel] window.
4. Click **Network Connections** in the [Network and Internet Connections] window.
5. Right-click the **Local Area Connection** icon and click **Properties**.

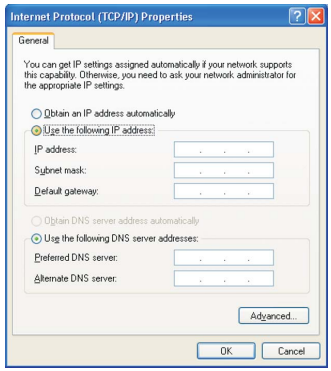


6. On the **General** tab, select “Internet Protocol(TCP/IP)” and click **Properties**.



7. **If your network environment supports DHCP:**
On the **General** tab, select “Obtain an IP address automatically” and “Obtain DNS server address automatically” and click **OK**.

If you want to use a static IP:
On the **General** tab, select “Use the following IP address” and fill in the IP address, Subnet mask, Default gateway, Preferred DNS server, and Alternative DNS server fields. Click **OK**.

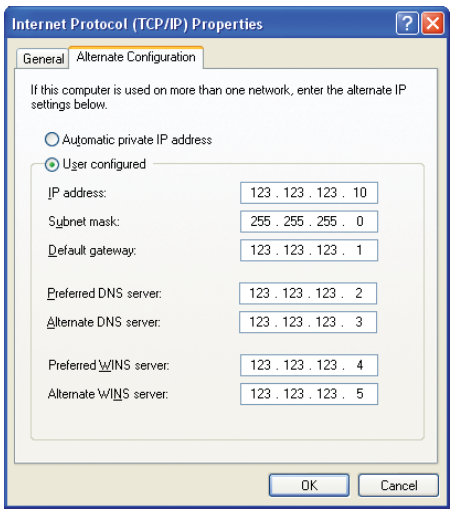

Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

To use both DHCP and static IP simultaneously

When you are alternatively using networks with either DHCP or static IP addressing, you can use both of the network connections without reconfiguring using alternative settings that enable simultaneous configurations of DHCP and static IP.

This function is provided only when your operating system is Windows XP.

1. Click **Start** > **Control Panel** > **Network and Internet Connections** > **Network Connections** > **Local Area Connection**, press the right button of the touchpad, and then select **Properties**.
2. Select the **Internet Protocol (TCP/IP)** item, and then click **Properties**.
3. In the **Alternate Configuration** tab, click **User configured**, and then enter the appropriate values for the following: IP address, Subnet mask, Default gateway, Preferred and alternate DNS server, and Preferred and alternate WINS server.


Internet Protocol (TCP/IP) Properties
General
Alternate Configuration
If this computer is used on more than one network, enter the alternate IP settings below.
Automatic private IP address
User configured
IP address:
123 . 123 . 123 . 10
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
123 . 123 . 123 . 1
Preferred DNS server:
123 . 123 . 123 . 2
Alternate DNS server:
123 . 123 . 123 . 3
Preferred WINS server:
123 . 123 . 123 . 4
Alternate WINS server:
123 . 123 . 123 . 5
OK
Cancel

4. When the configuration has been completed, click **OK**.
   Now you can connect to both networks using DHCP and static IP respectively.

Connecting Through a Wireless LAN

A wireless network (Wireless LAN) environment is a network environment that enables communication between multiple computers at home or a small-size office through wireless LAN devices.

Using the wireless network connections between the systems, you can use normal network functions such as sharing of files, folders and printers. Using computer-to-computer network (ad hoc) connections, you can access the Internet through a computer connected directly to the Internet even if your computer is not directly connected to the Internet. For details, see “Using Network Services” on page 44

The information provided in this section only applies to models equipped with an optional wireless LAN device.

Wireless network connections can be classified into two categories.

1) Access Point

You can connect to an AP to use the network. This is possible only in an environment equipped with an AP. For details, see “Connecting to an Access Point (AP)” on page 35

What is an Access Point (AP)?
An AP is a network device that bridges wired and wireless LANs, and corresponds to a wireless hub in a wired network. You can connect multiple wireless LAN installed computers to an AP.

2) Computer-to-computer (ad hoc)

This is also called a peer-to-peer or ad hoc network.

In computer-to-computer wireless networks, you can wirelessly connect 2 or more computers that have wireless LAN modules. Using computer-to-computer wireless networks, you can access the Internet through a computer that is connected to the Internet even if your computer is not directly connected to the Internet. For details, see “Connecting to computer-to-computer networks (peer-to-peer or ad hoc)” on page 36

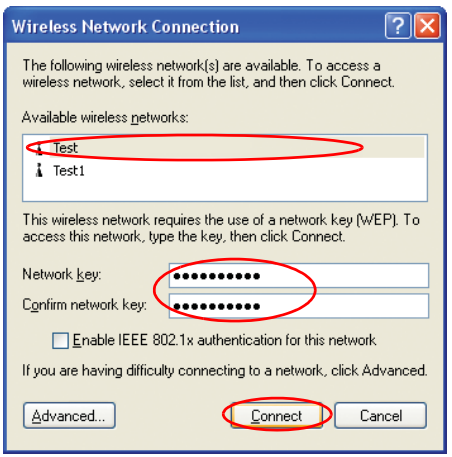
Connecting to an Access Point (AP)

This section describes how to connect to an AP. You can use the network when you are connected to an AP.

In this section, the configuration procedures are described for Windows XP installed computers. For information on the configuration procedures for other operating systems, see “Using Wireless Networks in Other Operating Systems” on page 41 Please ask your network administrator about detailed configuration information such as the network key (encryption key).

1. Right-click on the **Wireless Network Connection** ( ) icon on the taskbar, and select **View Available Wireless Networks**.

2. Select your desired AP (e.g. Test) to connect, and enter the encryption key for the AP in the Network key field, and click **Connect**.


Wireless Network Connection
The following wireless network(s) are available. To access a wireless network, select it from the list, and then click Connect.
Available wireless networks:
Test
Test1
This wireless network requires the use of a network key (WEP). To access this network, type the key, then click Connect.
Network key:
Confirm network key:
Enable IEEE 802.1x authentication for this network
If you are having difficulty connecting to a network, click Advanced.
Advanced...
Connect
Cancel

If the network key is not configured for the desired AP, select 'Allow me to connect to the selected wireless network, even though it is not secure’.

Now you are connected to the AP, and you can access the network.

Checking the connection status

Move the mouse pointer over the Wireless Network Connection ( ) icon on the taskbar, and the connection status is displayed.

Connecting to computer-to-computer networks (peer-to-peer or ad hoc)

In computer-to-computer wireless networks, you can wirelessly connect 2 or more computers that have wireless LAN modules.

You can connect by completing the following steps:

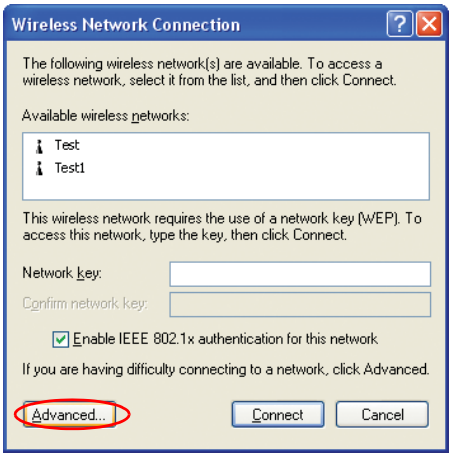
- Step 1. Set up a computer-to-computer network on a computer.
- Step 2. Connect to the configured computer from other computers.

In this section, the configuration procedures are described for Windows XP installed computers. For information on the configuration procedures for other operating systems, see “Using Wireless Networks in Other Operating Systems” on page 41

Step 1. Setting up a computer-to-computer network

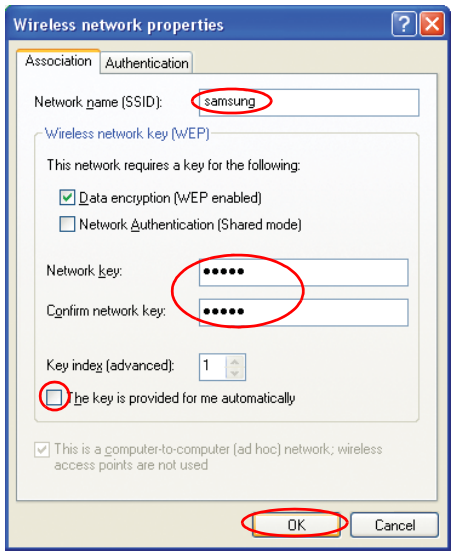
1. Right-click on the **Wireless Network Connection** ( ) icon on the taskbar, and select **View Available Wireless Networks**.

2. Click **Advanced**.


Wireless Network Connection
The following wireless network(s) are available. To access a wireless network, select it from the list, and then click Connect.
Available wireless networks:
Test
Test1
This wireless network requires the use of a network key (WEP). To access this network, type the key, then click Connect.
Network key:
Confirm network key:
Enable IEEE 802.1x authentication for this network
If you are having difficulty connecting to a network, click Advanced.
Advanced...
Connect
Cancel

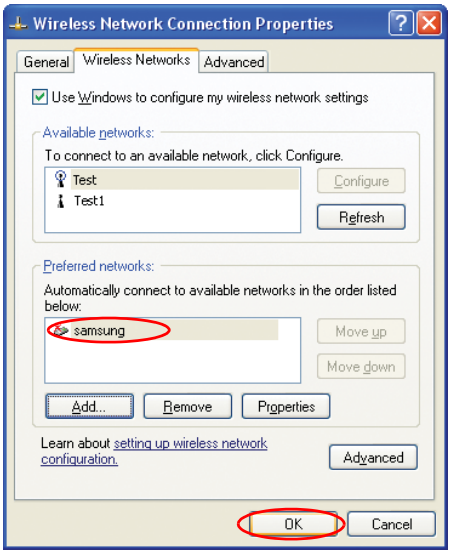
3. On the **Wireless Network** tab, click **Advanced**.
4. Clear 'Automatically connect to non-default network' check box, if it is selected. Select 'Computer-to-computer (ad hoc) networks only', and click **Close**.
5. In the **Wireless Networks** tab, click **Add**.

6. Enter the network name (e.g. samsung), and unselect 'The key is provided for me automatically'. Enter the encryption key in the Network key field, and click **OK**.



To prevent a network connection from an unauthorized user, it would be better to configure a network key (encryption key). A network key consists of 5 or 13 alphanumeric characters (e.g. magic), or of 10 or 26 hexadecimal numbers (a hexadecimal number is represented by numbers '0' to '9' or letters 'a' to 'f').

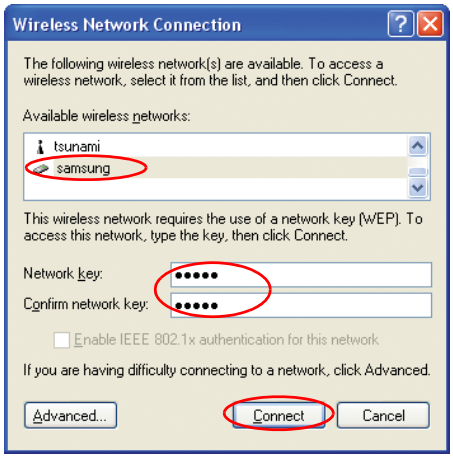
7. Check that the configured network name (e.g. samsung) is in the ’Preferred networks’ item, and click **OK**.



Now your wireless network setup has been completed.

Step 2. Connecting to the configured computer

1. Right-click on the **Wireless Network Connection** ( ) icon on the taskbar, and select **View Available Wireless Networks**.
2. Select the wireless network name (e.g. samsung) specified in ”Connecting to computer-to-computer networks (peer-to-peer or ad hoc)” on page 36, enter the encryption key in the Network key field, and then click **Connect**.

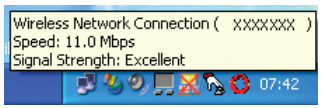

Wireless Network Connection
The following wireless network(s) are available. To access a wireless network, select it from the list, and then click Connect.
Available wireless networks:
tsunami
samsung
This wireless network requires the use of a network key (WEP). To access this network, type the key, then click Connect.
Network key:
Confirm network key:
Enable IEEE 802.1x authentication for this network
If you are having difficulty connecting to a network, click Advanced.
Advanced...
Connect
Cancel

If the network key is not configured in ”Connecting to computer-to-computer networks (peer-to-peer or ad hoc)” on page 36, select 'Allow me to connect to the selected wireless network, even though it is not secure'.

The two computers are connected and are able to communicate with each other. When the computers are connected, the 'Wireless Network Connection' message is displayed for a short time over the Wireless Network Connection icon of the two computers.

Checking the connection status

Move the mouse pointer over the Wireless Network Connection ( ) icon on the taskbar, and the connection status is displayed.



Using Wireless Networks in Other Operating Systems

To use wireless LAN on other operating system except Windows XP, you should install the MagicLAN program and configure the networking settings.

Installing MagicLAN program

1. Insert the System Software CD into your CD drive.
2. Click **Start > Run**. Then click **Browse** and locate the wireless LAN setup program and click **OK**.
   Program location: D:\Application\Wireless\LanSetup.exe
   (Assumed that the CD drive is labeled with "D:".)
3. Follow the directions displayed on the screens to complete the installation.
4. Restart your computer.

Configuring networking settings

1. Click the **MagicLAN Utility** ( ) icon on the taskbar. If it is not displayed on the taskbar, click **Start > Programs > MagicLAN > MagicUtility > MagicLAN Utility**.
2. Click **Yes** on the [WLAN Configuration Utility] dialog, and then click **Next** on the [Profile Wizard - Step 0/6] dialog.
   If the [WLAN Configuration Utility] dialog does not appear, click **Profile** and click **New**.
3. Type appropriate name and description in the **Profile Name** and **Description** fields on the [Profile Wizard - Step 1/6] dialog, and click **Next**. For example, type "SAMSUNG" in the Profile Name field.
4. Set the **Operating Mode** for the wireless network to use on the [Profile Wizard - Step 2/6] dialog, and then click **Next**.
   - To connect to a computer-to-computer network: Select "802.11 Ad-hoc".
   - To connect to an access point (AP): Select "Infrastructure".

5. Click **Survey** on the [Profile Wizard - Step 3/6] dialog, and select an accessible AP (for Infrastructure mode) or a computer-to-computer network (for 802.11 Ad-hoc mode). Click **Next**.
   - To create a computer-to-computer network:
     Type a network name (SSID) to use for a computer-to-computer network in the SSID field. For example, type "p2p" and then click **Next**.
   - To connect to a computer-to-computer network:
     To connect to a computer-to-computer network already created, double-click the network on the "Stations in range" list. For example, double-click the network named "p2p" on the list.
   - To connect to an AP (Access Point):
     Double-click the AP to use on the "Access Points in range" list.

6. If you want to set the security key (WEP key), select a value (either 40 bit or 104 bit) for **WEP Mode** on the [Profile Wizard - Step 4/6] dialog.
   - Procedure for Setting Security Key :
     1. Select either 40-bit or 104-bit for WEP Mode.
     2. Type the WEP key to use to connect to the computer-to-computer network or the AP (Access Point) in the corresponding key input field .
     3. Click **Next**.

We recommend to set a security key (WEP Key). For 40-bit, you should input either a 5-characters long ASCII string or a 10-digit long hexadecimal value. For 104-bit, you should input either a 13-characters long ASCII string or a 26-digit long hexadecimal value. The computers and access points on the network must use the same security key. For setting the security key for access points, consult your network administrator.

This version does not support the "Generate WEP key using Passphrase" function.

7. Set IP address on the [Profile Wizard - Step 5/6] dialog, and click **Next**.
   - To obtain IP address automatically (DHCP)
     Select the "Obtain an IP address automatically" check box.
   - To use a static IP address
     Select the "Use the following IP address "check box, and type IP Address, Subnet Mask, Default Gateway, Primary DNS, and Secondary DNS. (For more information, consult your network administrator.)

8. The settings you selected is displayed on the [Profile Wizard - Step 6/6] dialog. Select "After creating the profile, apply this setting." check box and click **Finish**.
9. In case of creating the profile for a computer-to-computer network, the "In the Ad-hoc mode…. " dialog may be displayed after profile creation. Click **Yes** to complete the setup.

For more information, press **<F1>** to see the Help files.

Using Network Services

While the computer is connected to the network, you can use network services to share files, folders, and printers. Using computer-to-computer wireless networks, you can access the Internet through a computer that is connected to the Internet even if your computer is not directly connected to the Internet.

Network services are provided for the computers that are connected to the network through wired or wireless network connections. For details, see “Connecting Through a Wired LAN” on page 31 and see “Connecting Through a Wireless LAN” on page 34

Sharing files or folders

This section describes how to share files and folders between computers connected to the network.

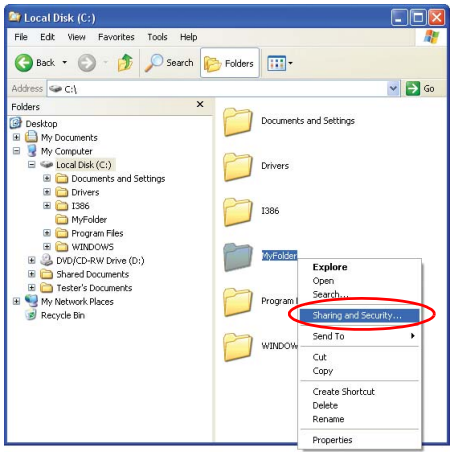
To share files, complete the following procedures:

- Step 1. Configuring the sharing of files and folders on a computer.
- Step 2. Accessing shared files and folders from another computer.

When a file or folder is shared, anyone connected to the network can open and delete the shared file or folder.
Configure a file sharing network only when the network is secure, and do not share important data.

Step 1. Configuring Sharing

1. Right-click the target file or folder to share in My Computer, and select **Sharing and Security**.



2. Click 'IF you understand the security risks but want to share files without running the wizard, click here'.

It has the same security effect as that of the 'Network Setup Wizard'. This screen does not appear if Internet Sharing Network Wizard has been installed in the computer-to-computer wireless network environment.

3. Select 'Just enable file sharing', and click **OK**.
4. In the 'Network sharing and security' field, select 'Share this folder on the network', enter the share name, and click **OK**.

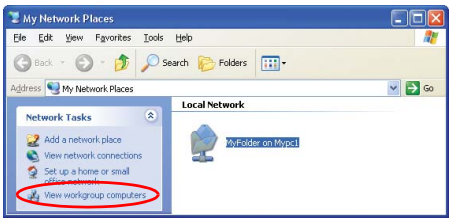
Be cautious when selecting 'Allow network users to change my files' since other network users can change the files in the shared folder.

The file and folder sharing configuration has been completed.

Step 2. Using Shared Files or Folders

This section describes how to access shared files or folders if your computer is a member of the same workgroup.

1. Click **Start > My Computer**. Under Other Places, click **My Network Places** in your computer.
2. Click '**View workgroup computers**', and click the desired computer to access the shared file.



If your computer is a member of another workgroup:

1. Click Other Places > Microsoft Windows Network.
2. Click the desired workgroup.
3. Click the desired computer to display the shared files or folders.

Sharing Printers

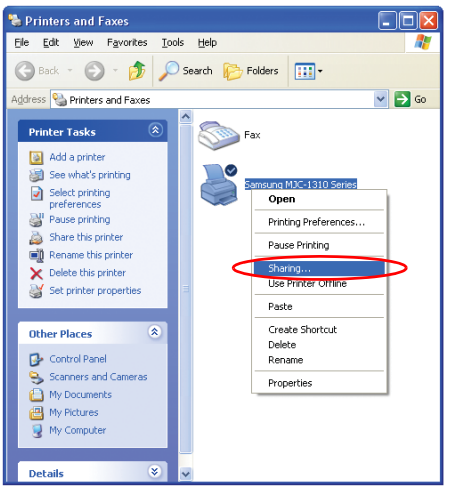
This section describes how to share a printer between computers connected to a network.

To share a printer, complete the following procedures:

- Step 1. Configure printer sharing in the computer connected to the printer.
- Step 2. Add and use the shared printer in other computers on the network.

Step 1. Configuring Printer Sharing

1. From the computer connected to the printer, click **Start > Printers and Faxes**.
2. Right-click the printer you want to share, and click **Sharing**.

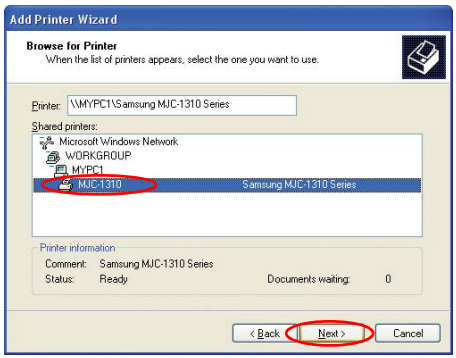


3. Select 'Share this printer', enter a share name for the shared printer, and click **OK**.
4. In the Printers and Faxes window, you will find the printer icon has been changed to another icon on a hand.

Step 2. Adding and Using a Shared Printer.

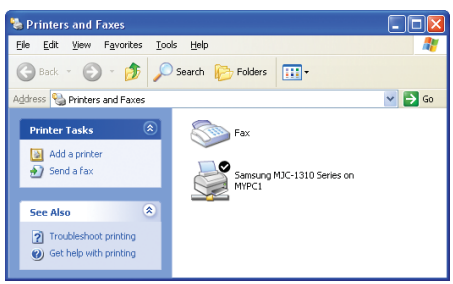
1. From a different computer that wants to use the shared printer, click **Start > Printers and Faxes**.
2. Click **Add a printer**.
3. In the Add Printer Wizard, click **Next**.
4. Select 'A network printer, or a printer attached to another computer', and click **Next**.

5. Select 'Browse for a printer', and click **Next**.
6. Select the workgroup or computer, select the desired printer, and click **Next**.



If you cannot find the desired printer, try again after a while.

7. Read the warning about a shared printer, and click **Yes** to install the shared printer.
8. Select **Yes** for 'Do you want to use this printer as a default printer?', and click **Next**.
9. Click **Finish**.
10. When the printer sharing configuration has been completed, the shared printer appears in the Printers and Faxes window.



Now you can print using the shared printer even if your computer is not directly connected to a printer.

Sharing an Internet Connection

Using computer-to-computer (peer-to-peer) network connections, you can access the Internet through a computer connected to the Internet even if your computer is not directly connected to the Internet.

To share an Internet connection, the computers should be connected to a computer-to-computer (peer-to-peer) wireless network. For details, see “Connecting to computer-to-computer networks (peer-to-peer or ad hoc)” on page 36
Also, one of the computers has to be connected to the Internet (external network).
The configuration procedure to share an Internet connection are described for Windows XP installed computers.

To share an Internet connection, complete the following procedures:

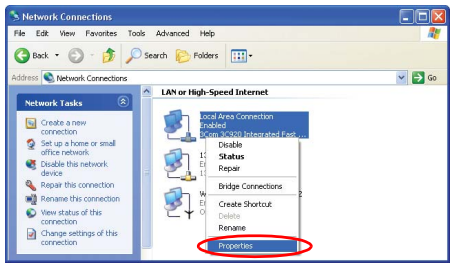
- Step 1. Configuring a Internet connection sharing from the computer connected to the Internet.
- Step 2. After completing the shared Internet connection configuration, check that the other computers can access the Internet through the shared Internet connection.

Step 1. Configuring Internet Sharing.

Configuring a shared Internet connection on the computer connected to the Internet.

1. Click **Start > Control Panel > Network and Internet Connections > Network Connections**.
2. Right-click on the device connected to the Internet, the external network, and select Properties.

If the computer is connected to the Internet through a wired LAN, select 'Local Area Connection'.



3. On the **Advanced** tab, select 'Allow other network users to connect through this computer's Internet connection', and click **OK**.

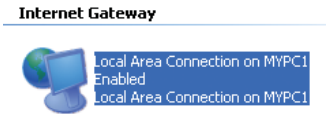
Step 2. Checking the Shared Internet Connection.

When the Internet connection sharing configuration has been completed, the network icon in the Network Connections window is displayed as follows:

Click **Start > Control Panel > Network and Internet Connections > Network Connections**.

– A computer connected to the Internet.

– A computer sharing the remote Internet connection (other computer).



If the icon does not appear after a long time, restart the computer.

Computers on the network can access the Internet through the shared Internet connection only when the computer connected to the Internet is turned on.

Using the Battery

Your computer uses a smart rechargeable Lithium-ion (Li-ion) battery pack for power when the AC adapter is not attached to an electrical outlet. The smart battery gives a accurate measurement of the current battery capacity which helps extend operating time by enabling effective power management in operating systems that take advantage of the accurate information supplied by the battery.

Charging the Battery

Your computer's battery starts charging automatically when you connect the power to the computer and to an electrical outlet. If the computer is off, the battery charges faster than if the computer's power is on.

Approximate charging times for the Li-Ion battery are:

- 4 hours with the computer off.
- 10 hours with the computer on.

While the battery is charging normally, the battery charge light on the computer is amber. When the battery is fully charged, the light changes to green.

When you use a new battery pack for the first time or use a battery after a long period of storage, the initial battery life is shorter than normal. Normal battery life resumes after a few discharge-recharge cycles.

Follow these rules for charging your battery:

- A battery normally discharges power when not used for long periods of time. Be sure to recharge the battery every two months when it is not in use.
- Make it a practice to discharge your battery fully before recharging the battery. This can help extend the life of the battery.
- Do not attempt to charge the battery in temperatures of under 0^{o}C or over 45^{o}C

All batteries eventually wear out and lose the ability to hold a charge. You may need to replace your battery pack after a year of average usage.

Safely Using the Battery

Follow these guidelines to safely use the battery:

- Turn off your computer and unplug it if you accidentally:
  - Expose the equipment to liquid.
  - Drop, jar, or damage the computer.
- Do not disassemble the battery, heat it above 100°C, or burn it. The battery used in this computer may cause a fire or chemical burn if mistreated.
- Your computer's rechargeable battery may be considered hazardous waste. If you replace your battery with a new one:
  - Keep the old battery out of the reach of children.
  - Dispose of the old battery promptly.
  - Make sure that you follow all local requirements when you dispose of the old battery.

Removing and Installing a Battery

1. Turn off the computer and close the LCD.
2. Turn the computer over so the bottom of the computer faces up.
3. While sliding the battery latch inward, slide the battery compartment cover up and off the computer.

4. Pull the battery out using a band on the battery.
5. To install the battery again, insert the battery with product information facing down. Close the battery compartment cover.

Monitoring the Battery Charge

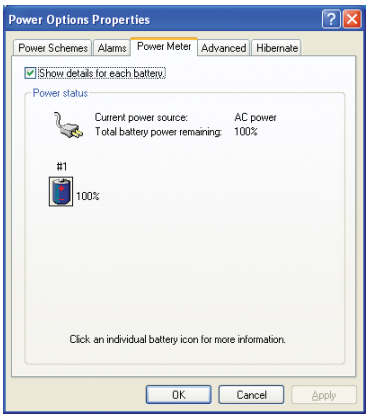
Battery life is affected by factors such as the power management settings in System Setup, the applications you use, and the brightness settings of the LCD. Under normal usage, the battery charge lasts approximately 2 hours.

Battery life estimates are subject to variation. The actual life of your battery may be less than the estimates given in the manual.

CPU speed when using the battery
When the computer is running on battery power, CPU operation speed is adjusted automatically to extend the battery operation time.

To use the power meter

Click **Start > Control Panel > Performance and Maintenance > Power Options > Power Meter** tab to display the power meter. You can check the current power source and total battery power remaining.



To use the indicators on the battery

Remove the battery from the computer and press the PUSH button on the side of the battery to display the battery power remaining.

Battery Warnings

If the battery charge is low (about 10%) you have 5–10 minutes of battery life left. You should:

- Save your work and,
- Connect the power cord to the computer or turn off the computer and install a fully charged battery.

You can adjust the battery alarm features by using the operating systems power management program (**Start** > **Control Panel** > **Power Options** in Windows).

If you cannot run your computer from the battery and the battery will not charge when you attach the power cord, the problem may be that:

- The battery temperature is below 0°C or over 45°C. If you think the battery temperature is too hot or too cold, turn off the computer, remove the battery, and let the battery reach room temperature. Then try charging the battery again.
- The battery may be defective, please try running your system from the AC adaptor with the battery removed from the system. Please contact the Samsung helpline if you are unsure.

To extend the battery's life span

When the battery is in continuous use without being completely charged or discharged, there may be a difference between the displayed battery charge and the actual battery charge, owing to the inherent characteristics of the battery.

Battery calibration process, which is completely discharging the battery and fully recharging it, can correct this problem.

1. Turn off the computer and disconnect the AC adapter.
2. Turn on the computer and press **<F2>** to enter System Setup.
3. Select **Smart Battery Calibration** in the **Boot** menu, and press **<Enter>** to start. The calibration process usually takes 3 to 4 hours depending on the remaining battery charge.
4. When the calibration process is complete and the battery is completely discharged, connect the AC adapter to fully recharge the battery.

Using System Setup

The System Setup (BIOS) program enables you to configure your computer hardware and set security and power-savings options. The settings you choose are stored in battery-maintained CMOS memory that saves the information even when the computer's power is turned off. When your computer is turned back on, it is configured with the values found in this memory.

Run System Setup if you get a message prompting you to run the program. You may also want to run System Setup, particularly the first time you use your computer, to set the time and date, use security or power-management features, or alter the settings of other features.

BIOS Caution:
If you are not familiar with BIOS setup and what the parameters mean, seek help from a person who is knowledgeable. Incorrect settings may cause your system to "Crash".

Your computer's version of System Setup may not include all the fields listed here or may include additional fields. Field names and order of appearance can vary according to the version of the BIOS (basic input/output system) on your computer.

Starting System Setup

To start System Setup, turn on your computer and then press **<F2>** and hold until the System Setup screen appears.

Table 2. System Setup Menus

Menu	Function
Main	Changes the basic system.
Advanced	Configures advanced features on your computer.
Security	Enables security features, including passwords.
Boot	Specifies the order of boot devices and configures boot features.
Exit	Specifies how to exit System Setup.

To open the menu you need to use, use the left or right arrow keys to select the menu name.

Table 3. System Setup Navigation Keys

Navigation Key	Function
<F1>	Displays the General Help window.
<Esc>	Exits the current menu.
<Left Arrow> or <Right Arrow>	Selects different menus.
<Up Arrow> or <Down Arrow>	Moves the cursor up and down between fields.
<F5> or <F6>	Changes Values
<F9>	Sets the parameters for the current menu to their default values.
<F10>	Save changes and exit system setup.
<Enter>	Executes commands or opens a submenu.

Changing Booting Priority

The **Boot** menu in System Setup enables you to select the booting device and to set booting options.

Boot Device Priority field enables you to select the order in which the computer attempts to boot from different devices. The field has 3 options: **DVD/CD-ROM Drive, Removable Devices and Hard Drive**.

To change the booting device priority, choose the device positions by completing the following:

1. At startup, press **<F2>** to open System Setup.
2. Use **<Right Arrow>** to select **Boot** menu.
3. Press **<Enter>** on **Boot Options**.
4. Highlight the **1st Boot Device** option with **<Up Arrow>** or **<Down Arrow>** keys.
5. Press **<F5>** or **<F6>** until the option is moved to the desired position.
6. Press **<F10>** to exit and save your changes.
7. Press **<Enter>** again to restart the computer.

Configuring the Password

Setting the Supervisor Password

By configuring a supervisor password, you can restrict system access to authorized users only.

1. Select the **Security** menu in the System Setup. To enter System Setup, see “Using System Setup” on page 56.
2. On the **Set Supervisor Password** item, press **<Enter>**.
3. Enter a password, press **<Enter>**, re-enter the password for confirmation, and press **<Enter>** again.
4. When a message confirming the password configuration appears in the [Setup Notice] window, press **<Enter>**.

Setting the User Password

You can configure user passwords so that other users can use the system.

Before configuring a user password, a supervisor password must have been configured.
Users can start the system with their user password, but cannot enter into the System Setup.
Deactivating the supervisor password also deactivates the user password.

On the **Set User Password** item, press **<Enter>**, and complete step 3-4 of "Setting the Supervisor Password".

Activating the Booting Password

Before activating the booting password, the supervisor password must have been configured.

Set the **Password on boot** option to [Enabled].

From now on, system booting will not proceed without the password.

Deactivating the Password

1. On the password to delete, press **<Enter>**. (e.g. supervisor password)
2. Enter the current configured password, and press **<Enter>**.
3. Leave the 'Enter New Password' and 'Confirm New Password' field empty, and press **<Enter>** to deactivate the password.

Using Power Management Options

Your computer includes **Power Management** options that can help the battery charge last longer and extend the life of the battery. Power management options will slow down or shut off system components when the components are not being used.

Power management may slow down system performance. Your computer runs fastest with the power cord attached, when power management is disabled.

In the next sections, basic and advanced methods of power management will be discussed.

Basic Power Management Schemes

This section discusses the basic schemes of power management when the computer is operating on battery power or using AC power.

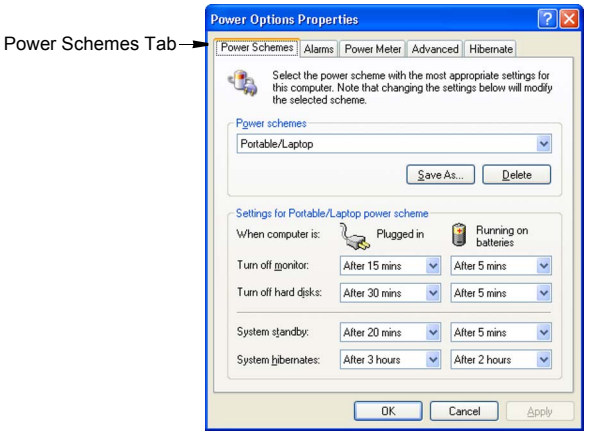
Standby vs. Hibernation
Hibernation is a state where the contents of memory are stored in a special file on the hard disk, and Standby simply keeps a small holding current through the memory to keep the data. You are more likely to sustain loss of data in Standby mode so it is recommended to save all open files before entering Standby.

Changing Devices:
Do not change PC Cards while in standby or hibernate modes.

To enter the power management window complete the following:

1. Click **Start** > **Control Panel** > **Performance and Maintenance**.
2. Click icon to display the **Power Options Properties** window.

3. Click the **Power Schemes** tab to display the basic power management options.



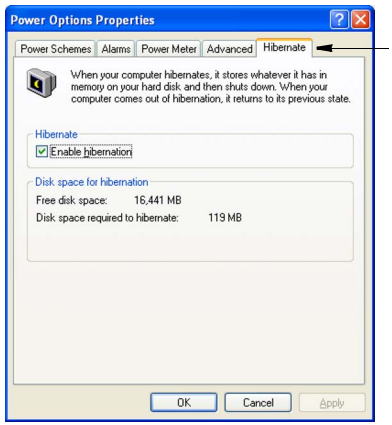
4. Select the time that you wish each of the following actions to occur in **Battery** and **AC power** mode.
   - Turn off monitor:
   - Turn off hard disks:
   - System standby:
   - System hibernates:

Turning off the monitor and HDDs will save a substantial battery power, therefore when in battery only mode select the shortest time practical.

❁ Hibernate Mode (*Power Management or Manual Method*)

When hibernation is used, your computer turns off and when you power up again, everything is restored exactly as you left it—including programs and documents you may not have saved or closed. Everything in memory gets saved to the HDD, and the monitor and hard disk get turned off.

If You Reinstall Windows
You should re-establish hibernate in power options by opening Power Options Properties window and click on the Hibernate tab then click “Enable Hibernation”.


Power Options Properties
Power Schemes
Alarms
Power Meter
Advanced
Hibernate
Hibernate Tab
When your computer hibernates, it stores whatever it has in memory on your hard disk and then shuts down. When your computer comes out of hibernation, it returns to its previous state.
Hibernate
Enable hibernation
Disk space for hibernation
Free disk space: 16,441 MB
Disk space required to hibernate: 119 MB
OK
Cancel
Apply

Frequent Interruptions:
If you experience frequent interruptions, you might also consider putting your computer into automatic hibernation after a specified number of minutes using the power management options.

❁ **Standby Mode** (*Power Management or Manual Method*)

Standby is used mainly for conserving battery power in your notebook computer. It also gives you the benefit of getting right back to your work without waiting for the computer to restart. Standby turns off your monitor and hard disks, placing your entire system in a low-power state. When you return to your computer, restores your desktop exactly as you left it. It is recommended that you do not enter standby mode with less than 20% battery power.

5. Click **OK** to set your power management options and close the window.

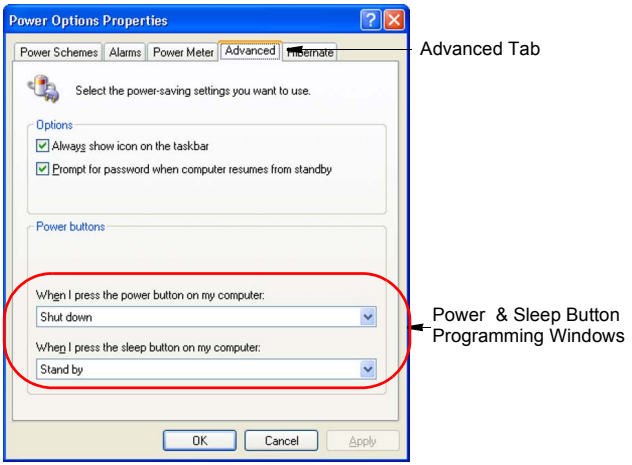
Standby Key:
The manual **<Fn+F4>** key combination will not activate Standby or Hibernate modes whilst you are playing a multimedia program or have an active USB device connected.

Advanced Power Management Schemes

This section discusses the advanced power management schemes. There are two buttons that you can use to manually conserve power.

To enter the power management window complete the following:

1. Click **Start** > **Control Panel** > **Performance and Maintenance**.
2. Click icon to display the **Power Options Properties** window.
3. Click the **Advanced** tab to display the advanced power management options.



4. Select the mode (**Do nothing/Ask me what to do/Standby/Hibernate/Shut down**) assigned to the Power button and/or Standby **<F4>** key. Closing the lid is the same as pushing the **Sleep** button.

The “Standby” key is assigned to the **<Fn+F4>** key combination. See ”Basic Power Management Schemes” on page 61 for a better understanding of Standby and Hibernate modes.

5. Click **OK** to set your power management options and close the window.

You can return to normal operation after you have used one of the “Power Management” buttons by quickly pushing and releasing the **Power** button.

Using the Hard Drive

Your computer includes a removable IDE (integrated drive electronics) hard drive. The IDE hard drive can store the data and programs your computer uses. The drive plugs into a connector on the system board.

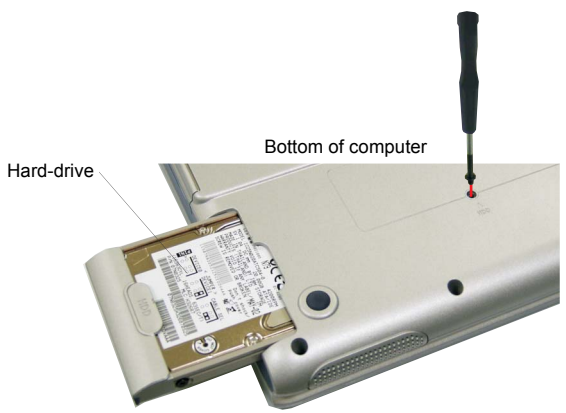
The hard drive that comes with your computer has already been formatted. Do not format the hard drive. Doing so destroys all data contained on the drive. If you need to format a new drive, or want to erase all data on your existing hard drive, refer to the online manual for your operating system.

Removing the Hard Drive

To prevent loss of data and damage to the disk, do not remove the hard drive while the computer's power is on and do not drop or jar the hard drive.

To remove the hard drive from the computer:

1. If you are installing a new hard drive, backup the application and data files on the old hard drive before removing it from the computer.
2. Turn the computer's power off.
3. Close the LCD panel, and turn the computer over so that the bottom of the unit faces up.
4. Remove the screw that holds the hard drive in place.



5. Pull the hard drive out of the computer.

Installing a Hard Drive

To install a hard drive:

1. Remove the old hard drive from the computer as described in the previous section.
2. Remove the 4 HDD retaining screws to remove the old HDD from the drive bracket.

3. Place the new HDD into the drive bracket and the replace the 4 retaining screws.
4. Slide the new drive into the hard drive compartment. Make sure the drive is pushed back as far as it will go.
5. Install the screw that holds the hard drive in place.
6. If required, install windows and appropriate device drivers according to the instructions below. For details, see “Reinstalling Windows XP” on page 92 and ”Reinstalling Software” on page 90.

Memory Modules

You can increase system memory by installing optional memory modules.

To avoid possible system problems, use only approved memory modules in your computer. Please consult the appropriate sections of this manual, Samsung Technical Support, or the support website (www.samsungpc.com) for additional information.

Before You Install Memory

To prevent personal injury and damage to the equipment, follow the precautions listed here before installing a memory module.

Take the following precautions when installing a memory module:

- Before you start this process, turn off the computer, unplug the power cord, and remove the battery. Also, disconnect any external devices.
- Before handling a memory module, discharge any static electricity by touching a grounded surface or using a grounding wrist strap.
- Do not insert objects with conductive material, such as metal screwdrivers or graphite pencils, into the memory-module compartment.
- Be careful in handling the metal plate of the memory door.

Installing a Memory Module

Handle a memory module carefully. Hold them only by the edges.

To install a memory module:

1. Close the LCD and turn the computer over so that the bottom faces up.
2. Using a screwdriver, remove the screw that holds the keyboard in the hole labeled "KBD".

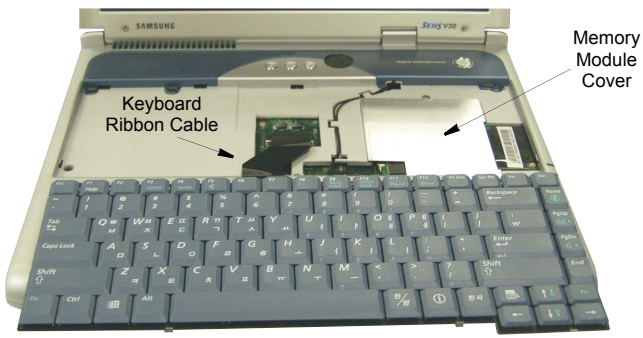
3. Turn the computer over so the keyboard is up and open the LCD cover.

Keyboard Removal
Use extreme care when removing the keyboard because it may be easily damaged. Also take care when lifting out the keyboard, not to damage the keyboard output ribbon cable.

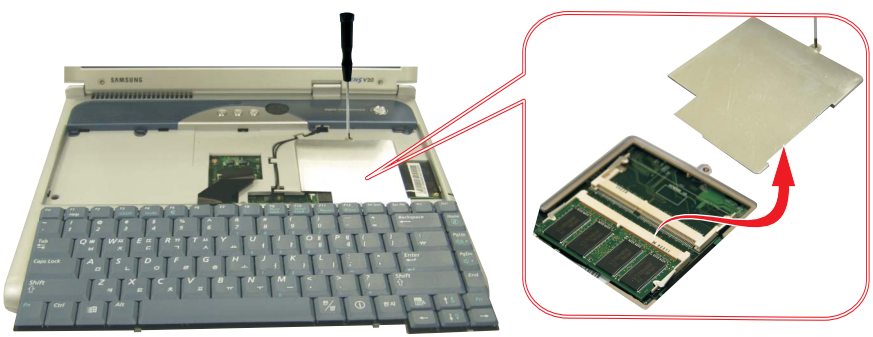
You do **NOT** have to unplug the ribbon cable to complete this process, you should just pull the keyboard back far enough to access the memory cover.

4. Carefully, using a small flat screwdriver, locate the (2) small tabs then push down and pry up the keyboard at the two (2) points indicated in the figure below.

5. Lift the keyboard away from the computer chassis to expose the memory module compartment door.



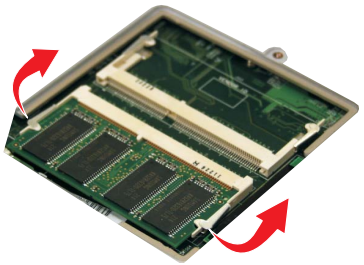
6. Using a screwdriver, remove the screw that holds the memory module compartment door in place.



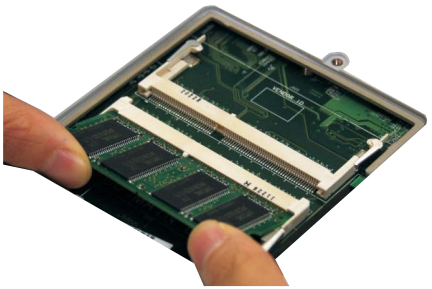
7. Grasp the door and pull the door off the memory module slots.

Memory Module Precautions:
When removing the module, pull on the plastic portion of the connector slots tabs only. Do not pull on the metal part of the tabs, this may damage the tabs.

8. Remove the installed module if necessary.
   a. Pull the tabs on the connector slot outward slightly, until the edge of the memory module pops up.



   b. Hold the memory module by the edges and pull it forward out of the compartment.
9. Align the connector on the memory module with the connector of the slot.
10. Push the memory module into the slot at a slight angle (~30^{0}) until the connectors are fully engaged.



11. Push down on the edge of the memory module until the module snaps into place.
12. Carefully align the memory module compartment door with the compartment, insuring that the tabs ate in properly then reinstall the screw you removed in step 6.
13. Replace the keyboard by inserting the top at a ~ 30^{o} angle and carefully pushing down at the bottom near the (2) tabs until it snaps into place.
14. Close the LCD and turn over the computer, then replace the screw you removed in step 2.

Video Features and Configuration

Resolution and Colour Depth

The resolution of the LCD is the sharpness of the image it can display. Resolution is measured by the number of pixels (individual dots) displayed on the entire screen. In general, the more pixels the LCD can display, the better the image.

The number of colours the LCD can display is measured by how many bits the LCD uses to represent each pixel:

- 16-bit colour can support 64 K (65,536) colours.
- 32-bit colour can support 16 M (16.8 million) colours.

All these video modes can be displayed on an external monitor. However, if you disconnect an external monitor that was attached to your computer and then start the computer, the LCD may revert to a different resolution than the one you chose for the external monitor.

Adjusting the LCD Brightness

There are 6 levels of LCD brightness (1: Dimmest ~ 6: Brightest). The default LCD brightness setting is level 4. Whenever you change the power source, the brightness level is changed to the following setting:

- When operating on AC power : Level 6 (Brightest)
- When operating on battery power : Level 1 (Dimmest)

Once the LCD brightness has been changed, the changed setting will be maintained after restarting the computer. When the power source is changed (AC to battery or battery to AC) while in operation, both the default brightness settings described above will be restored.

You can adjust the LCD brightness by pressing **<Fn+Up Arrow>** or **<Fn+Down Arrow>** on the keyboard.

Configuring Display Features

The following sections describe how to configure the display settings on your computer.

Display Resolution Notes:
When Windows XP is initially installed it will automatically adjust the resolution to maximum available.

Changing Colour Depth and Resolution

To change the colour depth and resolution of your LCD:

1. Click **Start** > **Control Panel** > **Appearance and Themes**.
2. Click icon. The Display Properties window appears.
3. Click the **Settings** tab. The Settings screen appears.
4. To change the colour depth, click the arrow next to the **Colour quality** palette and select the available colour depth you want.
5. To change the resolution, click and drag the slider under the **Screen resolution** until you select the available resolution you want.
6. Click **OK**.

Using External Display Devices

You can display on an external monitor or television instead of the LCD of your notebook computer. You can duplicate the same screen on both the LCD and the monitor simultaneously, but not the LCD and the television.

TV Connection Restrictions
You should only connect/disconnect cables and wires to your computer and TV when the power is off.

TV Support Limitations
The computer will only support televisions with S-VHS output capability. The standard composite video in port is not supported.

The TV-out port is not supported in DOS mode.

To start using an external display device

1. Connect the external monitor or the television to the monitor port or TV out port of the computer.
2. Right-click on the desktop, and click **Graphics Options** > **Output To**. Click **Monitor**, **Television**, or **Intel(R) Dual Display Clone > Monitor + Notebook**.

To use <Fn>+<F3> keys
Press <Fn>+<F3> to change the setting to display on the LCD, the monitor, or simultaneously on the LCD and the monitor.

To use <Ctrl>+<Alt>+<F1/F2/F3> keys
Press <Ctrl>+<Alt>+<F1> to change the setting to display on the monitor.
Press <Ctrl>+<Alt>+<F2> to change the setting to display on the television.
Press <Ctrl>+<Alt>+<F3> to change the setting to display on the LCD.

To change setting for each display device
Right-click on the desktop, and click **Graphics Options > Graphics properties**. On the **Device** tab, select a display device and change color quality and screen resolution setting, then click **OK**.

To stop using an external display device

1. Right-click on the desktop, and click **Graphics Options > Output To > Notebook**.
2. Disconnect the external monitor or television from the computer.

Using Options

Authorised Reseller Options

You can order the following options for your Notebook computer from your authorised reseller:

- An extra AC adapter
- An auto adapter that enables you to charge the computer's battery and operate the computer while in an automobile.
- An extra battery pack
- 128, 256 and 512 MB PC133 SDR SDRAM memory modules that enable you to upgrade your computer's memory to a maximum of 1 GB.

The options that are available may change periodically. Contact your reseller for updated information on current and new options.

Factory Options

You may order these options at the time of purchase:

- A CD-ROM drive (Factory Option)
- A CD-R/W drive (Factory Option)
- DVD-ROM drive (Factory Option)
- CD-RW/DVD-ROM Combo drive (Factory Option)
- IEEE 1394 Port (Factory Option)

Troubleshooting

Complete the following in the order presented until your system is functioning properly. If all of the steps below fail then contact your local reseller for assistance.

Questions and Answers

Please see “Questions and Answers” on page 77 for assistance in correcting any computer operational problems.

Check the Connections

Verify all of the power and peripheral cables are securely plugged into their sockets and that your system and power supply is on.

Norton AntiVirus

Run Norton AntiVirus to insure a virus is not affecting your computer. The Norton Antivirus Subscription on your Samsung notebook will expire within 3 months. It is your responsibility to update the virus definitions, and renew subscription with Symantec when the subscription expires.

To run Norton AntiVirus proceed as follows:

Click **Start > All Programs > Norton AntiVirus > Norton AntiVirus 2002**.

Windows Help and Support

Run Windows Help and Support to find problem that may be affecting your computer.

To run Windows Help and Support proceed as follows:

Click **Start > Help and Support**.

Reinstalling Software and Windows XP

If for some reason your system crashes, you may corrupt your HDD, Windows Operating system and/or some of your device drivers. If this is the case, use **System Recovery CD** to reinstall **OS** and **System Software CD** to reinstall the corrupt device drivers.

System Recovery Precaution:
Before you start restoring your windows operating system insure you backup all data on your hard drive.
Samsung is NOT responsible for any data loss.

Questions and Answers

The followings describe troubleshooting and reference information for the problems that may occur during using your computer.

Windows Related

Q1 The system does not shutdown properly.

A When the system does not shutdown normally, press and hold the Power button until the system manually shuts off. If the Power-Saving Mode is configured into the Power button, press and hold for more than 4 seconds to shut the system off. When the system is turned on after such manual shutdown, Scandisk will run to check errors in the system.

Q2 The system freezes during program operation

A1 There is an error with the program currently being used. Press the <Ctrl>, <Alt>, and <Delete> keys simultaneously and click and Task in the [Windows Task Manager] window.

A2 There is an error with the Windows OS. Reboot the system by using the Power button.

Q3 The USB mouse and touchpad do not work in the Safe mode on Windows 98.

A The touchpad may not operate in Windows 98 safe mode when the USB mouse is installed. Use the touchpad or an external PS/2 mouse in Windows 98 safe mode without installing USB mouse.

Q4 DOS window is displayed abnormally after applying a new desktop theme on Windows 98.

A When you apply a new desktop theme, if you run a MS-DOS window and then switch to full DOS screen mode, the screen may be displayed abnormally. If this symptom occurs, press the <Fn>+<F4> keys to switch to standby mode. Then, the screen will be displayed normally. If you use full DOS screen mode, we recommend to revert the desktop theme to the default theme of Windows. (To revert to the default theme, click Start > Settings > Control Panel> Desktop theme> Windows default.)
Please be careful not to use the full DOS screen mode when a custom desktop theme is used.

DOS Mode Related

Q1 DOS prompt is not displayed normally in full DOS screen mode.

A When graphic setting is set to notebook and the "Full Screen" option is set, this problem may occur if you switch between full DOS screen mode and DOS window mode. To resolve the problem, right-click on the desktop, and click Graphic Options > Graphic Settings, then clear the "Full Screen" check box. Or, click Graphics icon on the Windows taskbar and click Graphic Options, and then set the Monitor Alignment item to "Disable". We also recommend not to switch repeatedly between full DOS screen mode and DOS window mode.

To release the full screen mode with a shortcut key
Press the <Ctrl> + <Alt> + <F11> keys to release full screen. First, release full screen mode on Windows and then switch to full DOS screen to ensure that the screen is displayed normally.

Q2 When I connected a TV in DOS mode and start the computer, the screen is not displayed.

A DOS mode does not support TV output. Start your computer in LCD mode and then connect the TV in Windows mode.

Display Problems

Q1 LCD screen is dim.

A1 Adjust LCD screen brightness. Use the <Fn> + <Up Arrow> or <Fn> + <Down Arrow> keys on the keyboard.

A2 Each time you press the <Fn>+<F3 / LCD/CRT>, the screen is displayed in the order of Notebook>Monitor>Notebook+Monitor. Press those keys and check whether the screen is displayed properly.

Q2 I removed the graphic driver on Control Panel and the screen is not displayed.

A Start your computer in safe mode and then restart your computer. The screen will be displayed.

In case of using an external display device (monitor), connect it to your notebook and then configure the settings so that you can view the screen on both of your notebook and monitor at the same time (called Dual Display mode). Then remove the graphic driver on Control Panel. Now, you can view the screen on the monitor connected.

Q3 The notebook screen is smaller than the LCD size in dual display mode.

A This problem may occur when the screen resolution is set to a smaller resolution than 1024×768. This occurs because the Intel graphics chipset used in the product does not support extending to full screen when the screen resolution is set to 640×480 or 800×600 in dual display mode. Hence, you should release the dual display mode to view full screen fitted to the LCD size.

Right-click on the desktop, and click Graphic Options > Graphic Settings. Then select Notebook on the Device tab and select the "Full Screen" check box.

Or, click Graphics icon on the Windows taskbar and click Graphic Options, and then set the Monitor Alignment item to "Enable".

To set/release the full screen mode with a shortcut key
Press the <Ctrl> + <Alt> + <F11> keys to set/release full screen.

Q4 The screen blinks or the pointer disappears when the <Fn>+<F3 / CRT/ LCD> keys are pressed.

A This problem occurs when you try to switch display device by pressing the <Fn>+<F3 / LCD/CRT> keys when no monitor is connected. Connect a monitor before switching display device.

Q5 Display screen is abnormal. (Afterimage, white spots, blinking, etc)

A These problem may occur during detecting display devices when your computer starts, or awakes from standby or hibernation mode, or when you press the <Fn>+<F3 / LCD/CRT> keys, or change the screen resolution.

In case of afterimages, the screen will be displayed normally after a while. Please be careful that those symptoms may occur when you change modes (such as display screen mode) while a 3D game or program is being executed. If abnormal symptom persists, try to restart your notebook.

Modem Related

Q1 I cannot hear the modem sound.

A1 Check that the telephone line is properly connected to the modem.

A2 Check that the modem driver is installed properly.

1. Click Start > Control Panel > Performance and Maintenance > System.
2. Select Hardware tab > Device Manager > Modems in the System Properties window, and check if there is a yellow exclamation mark on the installed modem icon. If there is, delete the modem device driver and reinstall the driver, because the yellow exclamation mark represents a not properly installed driver.
3. If there is no yellow exclamation mark, double-click the installed modem, and click Diagnostics tab > Query Modem in the Modem Properties window to diagnose the modem.

   No message in either of Command and Response in the Diagnostics tab means that the modem is not operating properly.

   Diagnose the modem again after restarting the system or reinstalling the driver.

   (You have to exit all programs using modem in the advance of diagnostics of the modem).

A3 Although I can make a connection with the modem, I cannot hear the dial tone and modem connection sound. In this case check the following list:

1. Click Start > All Programs > Accessories > Entertainment > Volume Control.
2. Clear the Mute check box in the Telephone Line item.
   (Depending on the sound driver, it may be displayed as another name such as Modem, Phone, Mono. If there is no corresponding item, click Options > Properties > Volume Control, select 'Playback', and select the 'Telephone Line' under the 'Display the following volume controls'. Click OK.)

Q2 I cannot make a call using an extension line.

A In general, the dial tone of a PBX or a digital phone switching system is not a continuous one, unlike that of trunk line.

Therefore, the modem may not make a call because the modem mistakes the dial tone from a PBX or a digital phone switching system as a busy tone.

In this case, complete the following procedures.

- Using an AT command

As an initialization command, use the command, ATX3.

Otherwise, enter the ATX3 command manually before making a call.

It can correct this problem by skipping the dial tone check step.

- Configuring the Modem through the Control Panel

1. Click Start > Control Panel > Network and Internet Connections.
2. Under See Also, click Phone and Modem Options.
3. In the Modems tab, select the installed modem, and click Properties.
4. In the Modem tab of the Modem Properties window, clear the 'Wait for dial tone before dialing' check box.
5. When the configuration is completed, click OK.

Q3 How do I use my modem when dialing from overseas?

A1 Check that the modem is correctly configured according to the current country. Because the values for communication may differ according to the country, you may not be able to connect via the modem due to an incorrect modem configuration.

1. Click Start > Control Panel > Network and Internet Connections.
2. Under See Also, click Phone and Modem Options.
3. In the Dialing Rules tab, click Edit.
4. In the General tab in the Edit Location window, select the current country from the Country/region radio box, specify the Area code, and click OK.

A2 Because the shape of the telephone plug may differ according to the country, you have to purchase and use the appropriate telephone plug for that particular country.

Q4 How do I receive a fax while the system is in power saving mode (Rest mode) (For Windows XP and 2000)?

A To receive a fax when the system is in power saving mode, and the operating system is Windows XP or 2000, configure the system as follows:

1. The automatic fax reception function of the fax program needs to be activated. (For more information, refer to the corresponding fax program manual.)
2. Click Start > Control Panel > Network and Internet Connections.
3. Under See Also, click Phone and Modem Options.

4. In the Modems tab, select the installed modem, and click Properties.
5. In the Power Management tab of the Modem Properties window, select the "This device activates the computer in power saving mode" check box, and click OK.

   The above setting enables the modem to turn on the system and receive a fax when in power saving mode.

Wireless LAN Related

Q1 The Wireless LAN device is operating properly, but I cannot connect to the network.

This is due to an incorrect configuration, or a configuration error. Check the following check lists:

A1 If you are using a computer-to-computer network (peer-to-peer) connection, check that the name of the configured network is correct. The network name used to connect should be the same in all computers. The network name is case sensitive, if the name contains letters.

A2 If you are using a network key (encryption key), an AP (Access Point) and a computer-to-computer network (peer-to-peer), you have to use the same network key. The network key of the AP is configured in the AP management program. Ask your network administrator for more detailed information.

A3 Check that the device driver is properly installed. If the driver is not properly installed, you will find a yellow exclamation mark on the network icon by clicking Start > Control Panel > Performance and Maintenance > System > Hardware tab > Device Manager > Network adapters > Wireless LAN adapter. If there is a yellow exclamation mark, please reinstall the device driver with the system software CD.

A4 To connect to an access point using network authentication (Shared key):
- In Windows XP, select Network Authentication (Shared mode) in the Wireless Network Properties window.
- If you use the wireless LAN program (PROSet) in Windows 2000, make sure that the network authentication mode is configure to Shared in security settings.
For more information on the network authentication configuration procedures, ask your access point administrator.

Q2 The signal strength is excellent, but I cannot connect to the network.

Even if the signal strength is excellent, the network connection may not operate properly if the TCP/IP properties are not properly configured, or the network key (encryption key) is incorrect.

A1 Check that the TCP/IP properties are configured properly. When you connect to an AP, click the Wireless Network Connection icon on the taskbar and select the Support tab. If the IP is not allocated properly, the IP address will be displayed as follows. (e.g. 169.254.xxx.xxx)
If the network does not provide DHCP, you have to specify the correct IP address by asking your network administrator.

Even if the network provides DHCP, the server may not allocate an IP address to the client properly, and the client station cannot connect to the network.

A2 If you are using a network key (encryption key), an AP (Access Point) and a computer-to-computer network (peer-to-peer), you have to use the same network key. The network key of the AP is configured in the AP management program. Ask your network administrator for more detailed information.

Q3 I cannot share an Internet connection.

A1 It may require some time to synchronize the computers to share an Internet connection after the Internet connection sharing configuration is completed. If you cannot share Internet connection even after a longer period, restart the computer.

A2 Check if there is a configured bridge connection between the network adapters. If there is a configured bridge connection between the network adapters through the network configuration wizard, remove the network bridge, and reconfigure the Internet connection sharing.

Q4 I cannot connect to the AP wireless network.

A1 Check the wireless LAN radio environment. Using a wireless LAN may be restricted by the surrounding radio environment, and the distance between wireless stations. Also obstacles such as walls or doors may affect wireless LAN connections.

A2 Check that the AP is operating properly. Turn the AP off, and turn it on after a short wait.

A3 Check that the network key (encryption key) configuration for the AP is correct.

Q5 In the Windows XP 'Available wireless networks' window, the Wireless Network Connection is displayed as 'Not Available'.

A1 Check that the specific program for a wireless LAN connection is installed. Windows XP supports wireless LAN connections through the Wireless Zero Configuration (WZC) service. Therefore, an additional program for a wireless LAN connection is not required. However, installation of the specific program for a wireless LAN connection may disable the 'Available wireless networks' window of the Wireless Network Connection supported by WZC service in certain cases. Exit the program and try again.

A2 Initialize the device driver.
Click Start > Control Panel > Performance and Maintenance > System >

Hardware tab > Device Manager > Network adapters, and select the wireless LAN adapter. Right-click the network adaptor and select 'Disable'. Then right-click over the network adaptor and select 'Enable' after a short wait to check that the device is operating properly.

Q6 The Wireless network connection operates properly, but the Wireless Network Connection icon on the taskbar displays the "Disconnected" message.

A This is one of the known problems when you are using a wireless LAN connection after installing Windows XP service pack 1.

Check that the wireless LAN card is operating properly by initializing the device driver referring to A2 of Q5. For more information, refer to the following link for known problems with Microsoft.
http://support.microsoft.com/default.aspx?scid=kb;en-us;Q328647

Q7 When connecting to a computer-to-computer (Ad Hoc) network, I cannot connect to another computer connected to the same computer-to-computer network.

A1 Make sure that the security settings and network name of the computer-to-computer (Ad Hoc) network is correct.

A2 Check the TCP/IP properties of the computers to be connected through the computer-to-computer (Ad Hoc) network. All of those computers should be configured so that their IP addresses are within the same subnet range.
- If the IP address is configured to DHCP (Obtain an IP address automatically) in TCP/IP properties, IP address is configured within the same subnet range automatically.
- If the IP address is configured to static IP in TCP/IP properties, select Use the following IP address in the TCP/IP properties of the wireless adapter, configure IP address:10.0.0.1~10.0.0.254, and Subnet mask: 255.255.0.0, and then try again.

Q8 My notebook does not awake from standby mode or hibernate mode when Orinoco USB Wireless LAN is used.

A Click Start > Control Panel > Performance and Maintenance > System > Hardware tab > Device Manager > Network Adapter > Orinoco USB Client. Then check the properties of Orinoco USB Client.
Click Power Management on the Device property. Clear the "Can turn off this device to conserve power." check box. Then your computer will work normally.

Games and Programs Problems

In Windows XP, when some application programs, especially games, are running, some operating problems may occur because some specific functions are not supported normally or device drivers are not compatible perfectly. For latest drivers and troubleshooting information, please visit our web site.

Q1 LCD screen looks small when running a game.

A In dual display mode, full screen mode is not supported for LCD screen. If you want to extend the screen in LCD only mode so that it fits to the LCD size, right-click on the desktop, and click Graphic Options > Graphic Settings. Then, select Notebook on the Device tab and select the "Full Screen" check box. (Or, right-click on the desktop, and click Graphic Options, and then set the Monitor Alignment item to 'Enable'.)

To set/release the full screen mode with a shortcut key
- Press the <Ctrl> + <Alt> + <F11> keys to set/release full screen.
- Do not switch to full screen mode when a 3D program is running. Otherwise, the screen may be displayed abnormally in full screen mode.

Q2 Cannot run 3D games, or some functions do not work.

A Set the graphic setting for the game to '2D' or 'Software Renderer' and then try to run it again.

Q3 A game does not run when it is executed immediately after installation.

A This problem occurs when the game is not compatible with Windows XP. Try to run the game again and it will run normally.

Q4 My computer does not operate when I switch display device by pressing the <Fn> + <F3 / LCD/CRT> keys during running a 3D program or VCD/MPEG/DVD.

A Errors may occur when the <Fn> + <F3 / LCD/CRT> keys are pressed during running a 3D program or VCD/MPEG/DVD. Be careful not to press the <Fn> + <F3 / LCD/CRT> keys during running a 3D program or VCD/MPEG/DVD.

On Windows XP, the <FN> + <F3 / LCD/CRT> keys are disabled when running VCD/MPEG/DVD in 1024x768 screen resolution.

Q5 Screen resolution changes or the screen is not displayed when playing back music file (Mid/MP3/Wave) with Media player.

A This problem may occur when you try to switch display device by pressing the <Fn>+<F3 / LCD/CRT> keys or the <Ctrl> +<Alt>+<F1 or F3> keys when Media player is running in full screen mode. Be careful not to press the <Fn>+<F3 / LCD/CRT> keys or the <Ctrl> +<Alt>+<F1 or F3> keys while Media player is running.

Pressing the <Ctrl>+<Alt>+<F1> keys switches to monitor screen. Pressing the <Ctrl>+<Alt>+<F3> keys switches to notebook LCD screen.

Q6 The screens break when Windows Movie Maker is running in full screen mode.

A Change color quality to 16-bit, and the screen will be displayed normally.

Q7 Screen stopping occurs during playing back a video CD or audio CD from the CD-ROM drive.

A Click Start > Control Panel > Performance and maintenance > System > Hardware tab > Device Manger. Right-click on Secondary IDE channel under IDE ATA/ATAPI Controller and click Properties. On the Advanced Settings tab, check the transfer mode. If it is set to PIO only, change it to DMA (when available).

Q8 The screen is abnormal when a moving picture game is running.

A This problem may occur when a moving picture is running in full screen mode. Release the full screen mode on the Graphics settings window before running a moving picture.

Q9 The screen is displayed abnormally when an image is inserted into MS-Office program file. (MS-Word, MS-Excel, etc)

A The problem may occur during scrolling the screen when images are inserted into MS-Office program file. Update the graphics driver with the drivers contained in the Software CD and set color quality to '32-bit'. (Refer to ReadMe.htm on the Software CD.)

Q10 The screen is displayed abnormally when the Metal of Honor game is running.

A Set the texture detail to 'Low' on the Graphic settings of the game options. Or, install the graphics driver using the Software CD.

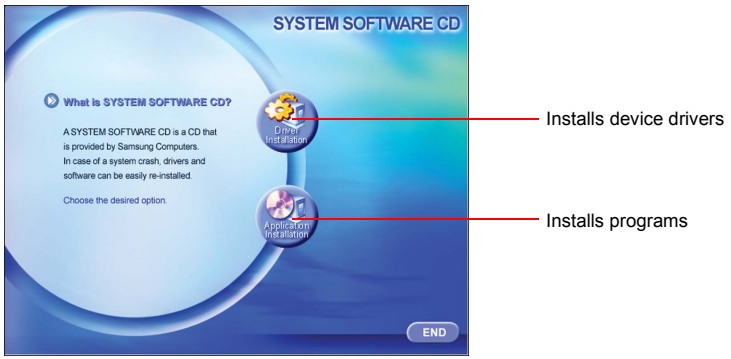
Reinstalling Software

If you have reinstalled the Windows operating system, or the system and program do not operate properly, you can reinstall the driver and program using the system software CD.

The drivers and programs included in the system software CD are listed in the D:\ReadMe.htm file. (Provided that the name of CD-ROM drive is "D".)

Running the system software CD

Insert the system software CD into the CD drive. The initial screen appears automatically.


SYSTEM SOFTWARE CD
What is SYSTEM SOFTWARE CD?
A SYSTEM SOFTWARE CD is a CD that is provided by Samsung Computers. In case of a system crash, drivers and software can be easily re-installed.
Choose the desired option.
Driver Installation
Application Installation
END
Installs device drivers
Installs programs

Installing drivers

1. In the initial screen, click **Driver Installation**.
2. Select the driver you want to install from the device installation screen, and click **Install Now!**

How can one install the drivers for operating systems other than Windows XP?
Install the appropriate driver software included in the system software CD.

Installing programs

1. In the initial screen, click **Install programs**.
2. Click **Standard installation** in the program installation screen (standard installation is recommended).
   - **Standard installation**: Installs and recovers programs to the state of shipment.
   - **User installation**: You can select the program installation location, and other options for the program installation.

Reinstalling Windows XP

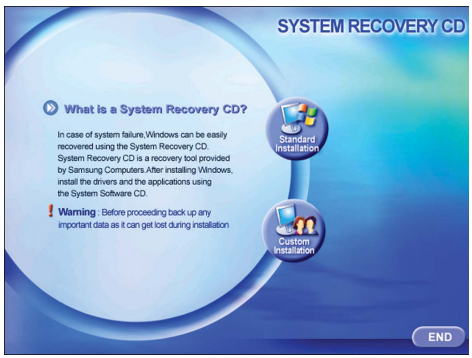
If the Windows XP does not operate properly due to an error in the system, or if you have replaced the hard disk drive, you can reinstall Windows XP using the system recovery CD.

With the system recovery CD, you can reinstall Windows XP only. To return the system to the state of shipment, reinstall the device drivers and programs with the system software CD after reinstalling Windows XP with the system recovery CD.

Reinstalling Window may delete the data on the hard disk drive such as files, programs, etc. In order to minimize damage from data loss, please remember to always back up data. Samsung Electronics is not liable in the case of data loss, please consult your warranty statement for clarification.

Reinstalling Windows

1. Insert the system recovery CD into the CD-ROM drive.
2. In the initial screen, click **Standard installation**. (Installation with the standard installation option is recommended. The standard installation does not require steps 5 and 7.)


SYSTEM RECOVERY CD
What is a System Recovery CD?
In case of system failure,Windows can be easily recovered using the System Recovery CD. System Recovery CD is a recovery tool provided by Samsung Computers.After installing Windows, install the drivers and the applications using the System Software CD.
Warning : Before proceeding back up any important data as it can get lost during installation
Standard Installation
Custom Installation
END

- **Standard installation**: Installs Windows preserving the data saved on the hard disk drive. However, since personal data that is in the Windows folder may be deleted, please backup personal data.
- **Custom installation**: Enables Windows installation after partitioning or formatting the hard disk drive. Note that all data on the hard disk drives may be deleted depending on your configuration.

3. The description for the standard installation appears. Click **Yes**.
   The installation starts, and the system will be restarted after a while.
4. After the system has restarted, the message 'Press any key to boot from CD' appears. Do not press any key at this time. After a while the partition configuration screen appears.
   To not change the partition, press **<Enter>**.

What is partition configuration?
Partition configuration is a function that devides the hard disk drive into one or several partitions. Note that changing the partition deletes all of the data on the hard disk drive.

5. Select the desired file system (format).
   To maintain the current file system, press **<Enter>**.

What is Format?
Format is an operation that initializes the hard disk drive. Since formatting operation deletes all content on the hard disk drive, use Format with great care.

6. Select the folder to install the Windows operating system.
   To delete the previous version of Windows and install in the current folder, press **<L>** on the keyboard.

Note that selecting 'Use another folder to install' creates a new windows folder and installs Windows in dual boot mode.

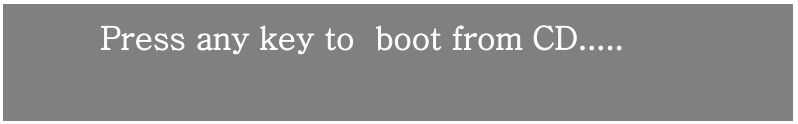
7. The Windows XP installation wizard appears. Proceed installation according to the instructions provided by the Windows XP installation wizard.
   When the installation is completed, the computer will restart.
8. After the system has restarted, the message 'Press any key to boot from CD' appears. Do not press any key at this time.

The Windows installation has been completed. Remove the system recovery CD, and insert the system software CD into the CR-ROM drive to install the device drivers and programs.

If You Cannot Run Windows

If you cannot run Windows, you have to boot the system with the system recovery CD, and reinstall Windows. If you boot the system from the system recovery CD, you can install Windows only with the user installation option. You cannot install with the standard installation option.

1. Insert the system recovery CD into the CD-ROM drive and start the computer.
2. If the following message appears on the screen, press any key from the keyboard.



This message appears only when the CD drive has booting priority. If the message does not appear, configure the CD drive as the first booting device referring to ”Changing Booting Priority” on page 58.

3. After a while, the partition configuration screen appears. Complete the installation referring to ”Reinstalling Windows” on page 92.

If you have CD-ROM drive installed on your computer
System setting may be changed after reinstalling Windows. Check if the transfer mode of the CD drive is set to DMA. If it is not, temporal stopping may occur when you run the CD-ROM drive.

To change the transfer mode:

1. Click **Start > Control Panel > Performance and Maintenance > System > Hardware** tab **> Device Driver**.

2. Right-click **Secondary IDE Channel** under **IDE ATA/ATAPI controller** item, and click **Properties**.
3. On the **Advance Settings** tab, change the Transfer Mode of Device 0 to "DMA if available" and click **OK**.

Specifications

System Specifications

The following is the basic hardware specification for the purchased product. Variations may exist depending on the model type.

Item	Specification	Remarks
CPU	Intel Pentium4 2.0~2.8 GHz/ Celeron 1.7,2.0~2.2GHz	Optional (not allowed to upgrade)
Cache memory	Pentium 4 models : 512 KB L2 cache Celeron 1.7 GHz models : 128 KB L2 cache Celeron 2.0~2.2 GHz models : 256 KB L2 cache	Optional
Main memory	128/256/512 MB SDR-SDRAM, 2 SODIMM socket	Maximum 1GB
Main Chipset	845GV Chipset	
Hard disk drive (HDD)	2.5'', UltraDMA 100, S.M.A.R.T 9.5mmH	
Graphics	Intel 845GV Default: 1024 x 768 pixels, XGA Memory: UMA 8 MB, DVMT support	
Sound	Crystal CS4202 (AC97 CODEC)	
Network Interface	Wired LAN: 10/100 Base T Ethernet Wireless LAN: Mini PCI (Optional) Modem: AC-97 Compliant Modem V.90 56Kbps support	
PCMCIA Slot	Type I and II Compatible	
Ports	Parallel, serial, USB (x2), PS/2, video (external monitor), RJ-11(modem), RJ-45 (LAN), microphone, headphone, S/PDIF, IEEE1394 (4 pin, optional), S-VHS	
Options	Lithium-Ion smart battery	
Dimensions (mm)	320 x 265 x 39.5	W x D x H
LCD Panel Size	14.1" /15" XGA TFT LCD	Optional
Weight	2.8 Kg (including battery, CD drive)	
Battery	Lithium-Ion smart battery	
Operation Environment	Temperature (storage) : -5 ~ 40°C (operation) : 10 ~ 32° C Humidity (storage) : 5% ~ 90% (operation) : 20% ~ 80%	
Operation Voltage	100 - 240 VAC	
Frequency	50 - 60 Hz	
Input/Output Power	1.3A 100V ~ 0.6A 240V	
Output Voltage	19.0 VDC	

* Please refer to the product catalog or consult your product provider for availability when purchasing optional accessories for this system.

Wireless LAN Specification

Product Specification

Item		Detailed Specifications
Physical Specifications	Dimensions	(Width X Height) 59.75 X 50.95mm
	operation temperature and humidity	Same as system operation
		Temperature: 0°C ~ 40°C Humidity: less than 95%
Power Specification	Power Saving Mode	45 mA
	Receiving Mode	200 mA
	Transmission Mode	370 mA
	Power	3.3 V +/-0.2 V
Network Specifications	Compatibility	IEEE802.11b standard (DSSS) Mini-PCI Rev.1.0
	Operating System	Microsoft Windows 98, ME, 2000, and XP - NDIS5 Miniport Driver
	Media Access Protocol	CSMA/CA (Collision Avoidance) with Acknowledgement(ACK)
	Security	Wired Equivalent Privacy support (WEP) 64bit / 128bit

Radio Specifications

RF Band	2.4 GHz			
Support Channels	1~13 channel (See "Regulatory Notice for Channel Use in France".)			
Device	Transceiver Direct Sequence Spread Spectrum (DSSS)			
Modulation Scheme	Direct Sequence Spread Spectrum (DSSS) CCK for high and mid transmission rate DQPSK for standard transmission rate DBPSK for low transmission rate			
Standard Output Power	10 mW			
Transmission Rate	High Speed	Mid Speed	Standard	Low Speed
	11 Mb/s	5.5 Mb/s	2 Mb/s	1 Mb/s
Antenna Type	Internal antenna (TX/RX)			

Regulatory Notice for Channel Use in France

The number of channels that can be used for wireless LAN differs from country to country. In France however, use only 4 channels (channel 10, 11, 12, 13) when using wireless networks.

- Standard: IEEE 802.b
- Regulation: ETSI 300 328, CE Marked
- Channel Allocation:
  - Channel 10 (2457 MHz)
  - Channel 11 (2462 MHz)
  - Channel 12 (2467 MHz)
  - Channel 13 (2472 MHz)

Abbreviations

A . . . . . Amperes
AC . . . . . Alternating current
ACPI . . . . . Advanced Configuration and Power management Interface
APM . . . . . Advanced Power Management
ATA. . . . . AT attachment (refers to the hard-drive interface in an AT-compatible computer)
ATAPI. . . . . AT attachment packet interface
BBS . . . . . Bulletin board system
BIOS . . . . . Basic input/output system
C . . . . . Centigrade
CD . . . . . Compact disc
CD-ROM . . Compact disc read-only memory
cm . . . . . Centimeters
COM . . . . . Communication (as in communication port)
CMOS . . . . . Complementary metal-oxide semiconductor
DC . . . . . Direct current
DMA . . . . . Direct memory access
DPMS . . . . . Display power-management signaling
DRAM. . . . . Dynamic random access memory
DSTN . . . . . Double layer super twist nematic
ECP . . . . . Extended capabilities port
EPP . . . . . Enhanced parallel port
g . . . . . gram
G . . . . . Gravity
GB . . . . . Gigabytes
hr . . . . . hour
Hz . . . . . Hertz
IDE . . . . . Integrated drive electronics
I/O . . . . . Input/output
IRQ . . . . . Interrupt request line

ISA . . . . . Industry Standard Architecture
KB . . . . . Kilobytes
kg . . . . . Kilograms
LAN . . . . . Local-area network
lb. . . . . . Pounds
LBA . . . . . Logical block addressing
LCD . . . . . Liquid-crystal display
m . . . . . Meters
mA . . . . . Milliampere
mAhr . . . . . Milliampere hour
MB . . . . . Megabyte
mm . . . . . millimeter
MPEG . . . . . Motion Picture Experts Group
MPU . . . . . Microprocessor unit
ms . . . . . Millisecond
PDF . . . . . Portable document format
PC . . . . . Personal computer
PCI . . . . . Peripheral component interconnect
PCMCIA . . . Personal Computer Memory Card International Association
POST . . . . . Power-on self-test
PNP . . . . . Plug and play
PS/2 . . . . . Personal System/2
RAM . . . . . Random-access memory
ROM . . . . . Read-only memory
SVGA . . . . . Super video graphics array
TFT . . . . . Thin-film transistor
USB . . . . . Universal serial bus
V . . . . . Volt
VAC . . . . . Voltage alternating current
VCC . . . . . Voltage collector current
VDC . . . . . Voltage direct current
whr . . . . . Watt hour

Glossary

AC adapter
The AC (or alternating current) adapter regulates current coming into your computer from the wall outlet. The current at the wall outlet is alternating current and needs to be changed by the adapter to DC (direct current) before your computer can use it for power.

ACPI
ACPI (Advanced Configuration and Power Interface)- a method for describing hardware interfaces in terms abstract enough to allow flexible and innovative hardware implementations and concrete enough to allow shrink-wrap OS code to use such hardware interfaces.

BIOS
BIOS stands for basic input/output system. The BIOS is software (often called firmware) that is independent of any operating system. It enables the computer to communicate with the screen, keyboard, and other peripheral devices without using programs on the hard disk.
The BIOS on your computer is flash BIOS, which means that it has been recorded on a flash memory chip that can be updated if needed.

Boot
To start your computer. A cold boot resets the entire computer and runs through all computer self-tests. A warm boot clears out computer memory only.

Boot disk
A disk containing operating system programs required to start your computer. A boot disk can be a floppy disk, hard drive, or compact disc.

Byte
The basic unit of measure for computer memory. A character—such as a letter of the alphabet—uses one byte of memory. Computer memory is often measured in kilobytes (1,024 bytes) or megabytes (1,048,576 bytes).
Each byte is made up of eight bits. For more information on bytes and bits, see an introductory book on computers.

Cache memory
Cache is very fast, zero-wait-state memory located between the microprocessor and main memory. Cache reduces the average time required by the microprocessor to get the data it needs from the main memory by storing recently accessed data in the cache.

CardBus

CardBus technology enables the computer to use 32-bit PC Cards. Hardware in the computer and the Windows operating system provide support for the 32-bit cards. The voltage of 32-bit cards (3.3 volts) is lower than that of 16-bit cards (5 volts). The 32-bit cards can transmit more data at a time than the 16-bit cards, thus increasing their speed.

CMOS memory

CMOS (complementary metal oxide semiconductor) memory is powered by the CMOS battery. The System Setup settings and other parameters are maintained in CMOS memory. Even when you turn your computer off, the information in CMOS memory is saved.

COM port

COM stands for communication. COM ports are the serial ports in your computer.

Compact Disc

A compact disc (CD).

Conventional memory

The first 640 KB of system memory. Operating systems and application programs can directly access this memory without using memory-management software.

Disk

The device used by the computer to store and retrieve information. *Disk* can refer to a floppy disk, hard disk, or RAM disk.

Disk cache

A software device that accumulates copies of recently used disk sectors in RAM. The application program can then read these copies without accessing the disk. This, in turn, speeds up the performance of the application.

A cache is a buffer for transferring disk sectors in and out of RAM. Data stored in a disk cache is a copy of data already stored on the physical disk.

DMA (direct memory access)

A method of transferring data from a device to memory without having the data pass through the microprocessor. Using DMA can speed up system performance.

DPMS

Display Power Management Signalling. Displays or monitors that comply with this can be managed by the Power Management features found in the system setup.

Floppy disk

A removable disk, also called *floppy* or *diskette*.

Hard drive

Also called *fixed* disk. A hard drive is connected to the computer and can be installed or removed. Data written to a hard drive remains until it is overwritten or corrupted.

The 2.5-inch hard drive in your computer was designed for use in a notebook computer. Because hard drives in notebook computers are smaller than those in desktop computers, their maximum storage capacity may be less than that of desktop hard drives. However, because of their smaller size, the drives handle shock and vibration better than larger drives, which is important for a notebook computer.

I/O

Input/output. Refers to peripheral devices, such as printers, that are addressed through an I/O address.

I/O address

I/O stands for input/output. Peripheral devices, such as printers, are addressed through the I/O port address.

IRQ (interrupt request line)

The IRQ is a hardware line that a device uses to signal the microprocessor when the device needs the microprocessor's services. The number of IRQs is limited by industry standards.

LCD (liquid-crystal display)

The LCD screen on your computer differs from the display screen of a desktop monitor. Most desktop monitors use CRT (cathode-ray tube) displays, which work by moving an electron beam across phosphor dots on the back of the screen. The phosphor dots light up to show the image. LCDs use a liquid-crystal solution between two sheets of polarizing material. Electric current passing through the liquid aligns the crystals so that light can or cannot pass through them, creating an image.

MB (megabyte)

1,024 kilobytes.

Megabit

1,048,576 bits or about 128 kilobytes.

Operating system

A program that supervises the computer's operation, including handling I/O. Application programs and users can request operating-system services. A user might request operation-system services to copy files or format a disk. An application program might use the operating system to obtain keyboard input, write data to a file, or write data to a screen.

PC Card

PC Card stands for personal computer card. The Personal Computer Memory Card International Association (PCMCIA) defines the standards used to develop all PC Cards. PC Card types include: modems, Ethernet adapters, SCSI adapters, ATA cards, and memory cards.

PC slot

The PC slot is the hardware slot in the computer where the PC Card is placed.

Pixel

A pixel is an individual dot in a graphic displayed on your computer. The pixels are so close together that they look as though they are connected. An LCD screen displays thousands or millions of pixels.

Plug and Play

A plug and play operating system automatically configures computer components to work with your system. With this type of operating system, you normally do not need to set jumpers on devices or set memory addresses or IRQs.

RAM (random access memory)

The computer's system memory, including conventional and extended memory. You can write to and read from RAM. Information stored in RAM is temporary, and is erased when the system is turned off.

Refresh rate

The refresh rate is the rate at which the image on the LCD screen is rewritten to the screen. A fast refresh rate helps keep the image from flickering.

Resolution

The resolution is the sharpness or clarity of the image on your LCD screen. Resolution is measured by the number of pixels the computer’s screen can display. For example, a resolution of 800 x 600 means that the screen can display 800 pixels in row and can display 600 rows. The more pixels displayed, the higher the resolution and the better the image.

ROM (read-only memory)

Permanent computer memory dedicated to a particular function. For example, the instructions for starting the computer when you first turn on power are contained in ROM. You cannot write to ROM. (ROM is not the same as RAM).

Sector

Also known as *disk sector*. The portion of a track that is numbered and can hold a specified number of characters (usually 512 KB).

Shadow RAM

A write-protected area of RAM that contains a copy of the BIOS. As the computer boots, the BIOS is copied from its permanent location in ROM to RAM. The BIOS can be executed much faster in RAM than in ROM. The BIOS remains in shadow RAM until you turn off the computer.

TFT (thin film transistor) LCD

A TFT LCD uses a separate transistor circuit to control each pixel. This technology provides the best resolution for an LCD screen. A TFT LCD is also sometimes called an active matrix LCD.

Zoomed video

Zoomed video technology enables zoom video PC Card to transfer data directly from the card to video and audio systems without going through the microprocessor. This process improves video performance. Video conferencing and real-time multimedia devices, such as video cameras, are supported by zoom video.

Using Windows 2000

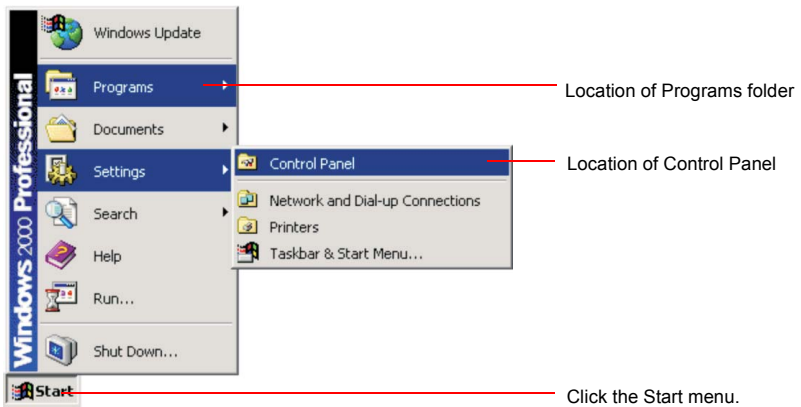
Samsung notebook provides Windows XP, 2000, or 98SE as operating system depending on the product model.

Because the use of Windows XP is similar to Windows 2000, the same User Guide (Online Manual) is used regardless of operating system installed on your notebook. However, since there are some differences in menus, screens, and operations, you need to refer to this Guide if your notebook's operating system is Windows 2000.

Registering Windows 2000

The procedure for registering your Windows presented in the Installation Guide is explained based on Windows XP. However, because registration procedure for Windows 2000 is similar, you can proceed the registration by following the direction displayed on the screens.

Locations of Programs folder and Control Panel



To Playback Audio or Video CD

Just insert your audio or video CD into your CD drive. The associated application program will start automatically and playback the audio or video files.

If your video CD is not played back automatically, locate and run the video file (for example, DAT file) to playback on your video CD.

Writing Data to CD (Applicable to the model equipping with CD-RW)

Descriptions in ”To write data on a CD (Option)” (p 23) section are applicable only to Windows XP. For using CD-RW drive on Windows 2000, refer to the CD-RW manual provided separately with your CD-RW.

Reinstalling Windows 2000

For reinstallation of Windows 2000, refer to ”Reinstalling Windows XP” (p 92) section in the User Guide. The installation procedure for Windows 2000 is similar to Windows XP, but some screens may differ.

Using USB 2.0 Drive

This computer supports USB 2.0 devices. When you use a USB 1.1 device in Windows 2000, if the computer enters into suspend or hibernate mode and resumes, the USB 1.1 device may disappear in My Computer window.

To resolve this problem, proceed as following.

1. Unplug the device and plug it again into same or different port.
2. Restart the computer.
3. Disable and enable the EHCI (USB 2.0) controller.
   (Click **Start > Settings > Control Panel > System > Hardware** tab **> Device Manager**. Disable and then enable "Intel PCI to USB Enhanced Host Controller" item under "Universal Serial Bus controllers".)